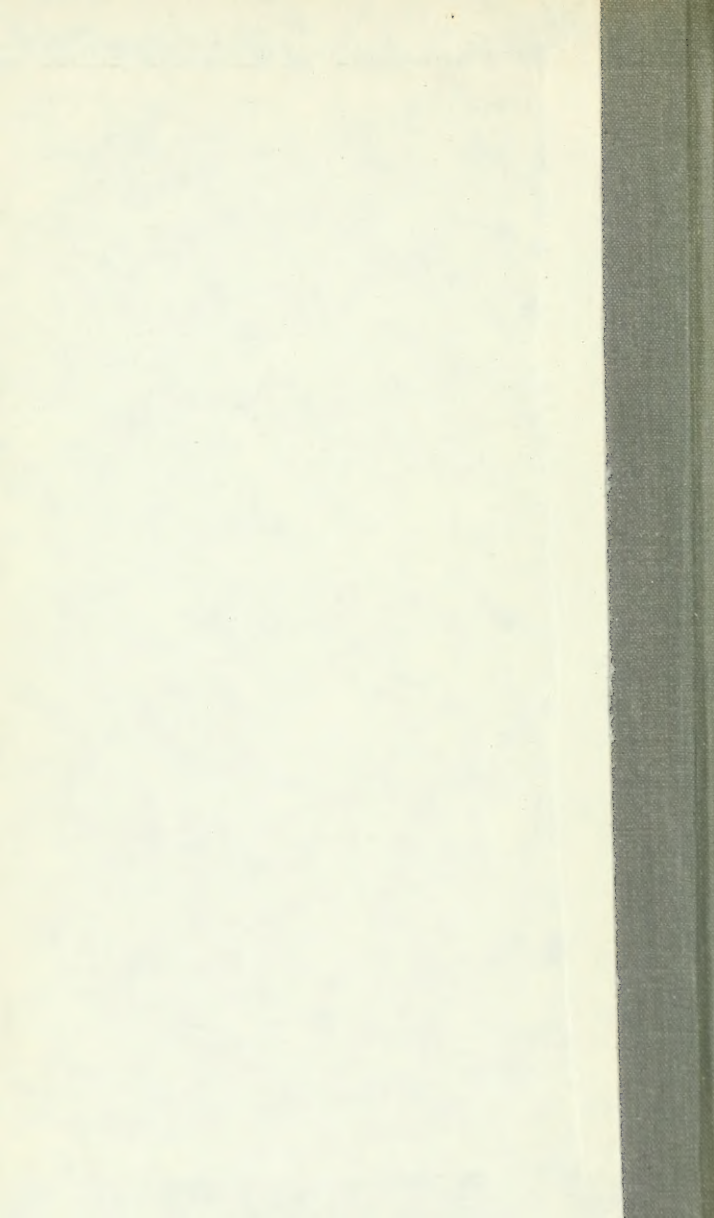


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AND
DISEASES OF WOMEN AND CHILDREN

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ORIGINAL COMMUNICATIONS.

THE TREATMENT OF ACUTE ENDOMETRITIS BY DRAINAGE,
AND A SUGGESTION AS TO INCISION OF THE ANTERIOR
CERVICAL WALL IN CERTAIN CASES, CHIEFLY CHRONIC.¹

BY
WM. M. POLK, M.D.

IN a paper read before the Obstetrical Society of this city more than a year ago, and in another read before the American Gynecological Society at Washington in September last, I considered the question of chronic endometritis. I will therefore omit in the body of this paper mention of this variety of endometritis, and confine myself to the consideration of the acute form.

Acute endometritis presents itself to us chiefly after abortion, miscarriage, and labor. The ravages initiated by it when started at such times are in excess of those reached when the process occurs in a uterus "non-pregnant." Yet the process in the latter is important enough to be studied alone, were that necessary; but I think we can consider this question of treatment, as applied to acute endometritis both in the recently pregnant and so-called "non-pregnant" uterus, to-night.

¹ Read before the Obstetrical Society of New York, May 21st, 1889.

Undoubtedly the process when present in the "non-pregnant" uterus is more difficult to combat than when found in the recently emptied organ. In reality I have to report but one example of the treatment as applied in the former condition, but that case was enough to illustrate the advantages of the method; and surely, if we were permitted to argue from one such instance, the good result in the case would establish the procedure as a measure to be always employed.

Because of the greater difficulty in applying this treatment in the acute cases now in question, I shall speak of them first. At present about all that is done is to place the patient in bed, clear out the bowels, apply heat over the hypogastrium, use hot douches freely, and keep down pain with anodynes. As far as it goes, the treatment is rational and in a certain degree satisfactory; but it scarcely goes far enough, as is shown by the frequency with which the sequelæ of acute endometritis occur, and that, too, in many of the cases in which this treatment has been intelligently applied. I am therefore of the opinion that something more is required, and I believe that the something more required is drainage. The picture presented by an acutely inflamed endometrium in life is no doubt before you all. The essential points of it are the swollen endometrium and consequently the closed internal os. I say closed, because I believe that in the majority of such cases the uterine lining membrane is so swollen that it practically prolapses and consequently tends to obstruction of the internal os. Such a state of affairs would of necessity tend to the damming-up of the secretions, aggravating the inflammatory process and promoting its extension. Assuming the correctness of this picture, every one will at once admit the necessity for drainage; but at the same time some will question its feasibility and others will doubt its propriety, fearing that any interference with such a cavity will only be adding fuel to the flame already existing. All of us have had a mortal dread of this cavity, second only to that which so long barred our way to the secrets of the peritoneum, and can therefore appreciate the attitude of this latter class.

I believe, however, that in the presence of antiseptic precautions the feeling is as much out of place in the one instance as we know it to be in the other. I presume that all of us agree

as to the evils which spring from endometritis ; and this assumption holds good, no matter which one of the pathological views as to the manner of extension of inflammation to the surroundings and appendages of the uterus we adopt. Salpingitis, ovaritis, periovaritis, cellulitis, abscess—this is the array of evils springing from endometritis, and I believe that if we are ever to limit this array it must be by creating a diversion at the fountain-head. Some time ago I had occasion to pack iodoform gauze into the peritoneal cavity and allow it to remain for a week ; no ill reaction occurred. It would appear, then, that this or some similar substance could be placed in the cavity of the uterus with impunity. This I believe to be true, even though the organ be acutely inflamed at the time, provided you make sure the escape through the cervical canal of the fluids which may result from such inflammation.

With the hope that these preliminary remarks may serve the purpose of an introduction to the more important details of the method of the treatment proposed, I now ask your attention to a brief statement of that method.

First let us consider it in its application to acute endometritis in the "non-pregnant" uterus. Such a uterus offers the greater difficulties in the application of the treatment, as you readily understand ; but, given such a case, I proceed in the following manner : The vulva, the vagina, and the cervix, including the cervical canal (nicking the os externum, if necessary), are scoured with soap and water, and washed out well with a 1 to 2,000 solution of bichloride of mercury. Approaching the internal os, it will in all probability be found free to an instrument passed from below, though its lumen is no doubt temporarily closed by the prolapsed endometrium. If it be patulous, the uterine cavity is at once freely irrigated with the 1 to 2,000 bichloride-of-mercury solution. If the internal os be obstructed, it should be dilated with any good dilator before it is irrigated. For the purpose of the irrigation I use two Weiss catheters introduced one after the other, the fluid entering through one and returning through the other. As soon as the irrigation is completed, the vagina and cervical canal are dried out ; a cervical speculum, long enough to pass the internal os, is introduced, and through that a piece of iodoform gauze or iodoform candle wick is introduced to the fun-

cus. The surplus is brought loosely through the vagina, the outer end terminating upon a dry gauze or absorbent cotton pad placed against the vulva. At the end of twenty-four hours a fresh drain should be introduced as before, preceded, at this and at such succeeding dressings as may be required, by an intra-uterine irrigation of simple warm water. The vulval pad should be kept dry, renewing it as often as may be necessary to that end. Thus far my experience extends to but one case (another has been added, since the paper was read, corroborating the experience of the first), and in that but one removal of the intra-uterine drain was needed to secure what I then regarded as sufficient relief, viz., a decided lessening of the hypogastric tenderness and a marked diminution of the discharge. Whether subsequent cases will end so well remains to be seen.

The details thus described would seem to involve more disturbance than such cases would allow; but, barring the element of nervousness of apprehension, the tax upon the patient is limited to the placing of the drain in the uterine cavity, and, where needed, to the preliminary dilatation of the internal os. Cocaine might overcome the pain, but a more valuable remedy is to be found in the facility and consequent rapidity with which the drain is carried to the fundus. The essentials for this are free passage through the internal os, and an instrument that will not only carry the end of the drain to the fundus, but leave it there when it (the instrument) is withdrawn. The first is met by the cervical speculum; the second may be met by some instrument now in use (a large sound, for instance, with a roughened end, or a Sims tampon screw).

Speaking next of this treatment in acute endometritis following labor or abortion, we approach a field in which I am sure that the advantages of the measure will be easily apparent. The details of the application of the drain are the same as described above; but, so large is the cervical canal, less difficulty is met with, and, owing to the greater danger accompanying this variety, the benefits are the more striking.

Here the preliminary cleansing of the vulva, the vagina, and the cervical canal is the same as before, but the treatment of the uterine cavity is more radical. Its walls should be freed by the curette from any deciduous tissue, all blood clots removed, and then the irrigation should be made. Here I suggest the intro-

duction of enough of the gauze or wicking to loosely fill the cavity, bringing the excess out through cervix and vagina, as in the class of cases first mentioned. A removal of the entire dressing should be made at the furthest in twenty-four hours, and is to be repeated as often (usually not more than twice) as the state of the uterus demands. I have been so much impressed with the advantages of this kind of drainage in this latter class of cases, that I have resorted to its use as a prophylactic in a case of abortion where, owing to the accompanying conditions, I had reason to fear the supervention of septic endometritis.

Another aspect of this treatment is its application to cases where the tubes are already manifestly involved, even though they be involved to such a degree as to have pelvic peritonitis associated. I think well of this attempt to strike at the source of the evil. Of course I refer to cases in which a laparotomy (as the better means of meeting the mischief) is not indicated. Leaving now the question in its application to the more acute phases of this disorder, allow me to ask attention to a certain class of chronic cases easily recalled by all of us. We have a case of bilateral chronic salpingitis, in which one tube, with perhaps its associated ovary, is practically destroyed. Its removal, therefore, is imperative; but the other tube and ovary are normal, and there appears to be no good reason for their removal. Yet experience has shown that in many instances where such appendages have been allowed to remain, but a few months elapse before the patient returns with these appendages perhaps hopelessly diseased. It has suggested itself to me, therefore, that, in every instance where the clinical evidences show one sound tube, before operating for the removal of the unsound one a radical effort along the lines of treatment herein suggested should be made to place the endometrium in a healthy state. In other words, cure the chronic endometritis, and then amputate the destroyed appendage, if the conditions remaining still demand it.

The sound tube is evidently infected from the endometrium. If it be possible, let us then kill the infection in the uterus before going further. There is no good reason why such treatment should not follow the removal of the tube diseased, and in certain cases it might be judicious to so continue it;

but the possibility of influencing favorably the unsound tube, so as to at least relieve the patient's sufferings and nullify the dangers of the disorder, would influence me, no matter what might be my subsequent course.

Before closing this paper I must ask your attention to a procedure to which I have several times resorted in cases of chronic endometritis (principally of the hemorrhagic form), in order to overcome unusual stenosis, and more particularly resiliency at the internal os. I refer to slitting the anterior wall of the cervix up to the internal os. In some instances (found by me so far to be almost exclusively confined to cases of chronic endometritis hemorrhagica) the body of the uterus, with its cavity, is decidedly enlarged, but the cervix is slender and its canal narrow. The entire cervical canal yields with difficulty to dilatation and soon returns to its original dimensions. This is especially the case at and just below the internal os. I have found, therefore, drainage, even with the gauze, very uncertain.

Realizing the danger of tampering with the uterine cavity without providing an adequate outlet below, and finding that when I did place the gauze its action appeared to be hindered by the tight closure of the upper part of the cervical canal, I concluded to lay it open. The manner of procedure is as follows: Having cleansed the tract as heretofore described, the cervix is drawn down and fixed; its length is then measured, thus definitely locating the internal os. An incision is then made through the anterior vaginal wall at the cervical junction, and, using the finger nail aided by the knife handle, the anterior cervical wall is bared throughout its lower three-fourths. With a pair of scissors the cervix is next slit up as far as it has been exposed. Using next the dilator, it will be found that the remaining narrow bridge of tissue extending to the internal os will yield easily and the recontraction will not occur. This yielding is, no doubt, a tearing, but it will be in the line of your incision, and, because of the loose anterior attachment of the peritoneum, will not involve that membrane. The possibility of subsequent involvement of the cellular tissue in the vesical and paravesical spaces is fully provided against by antisepsis and drainage. Such hemorrhage as may occur is easily controlled by hemostatic forceps. As to the bladder, there is little chance of injury.

In closing this paper, let me say that the prime object held before my mind has been an endeavor to find some means by which we could limit tubal disease. A few years ago we knew so little about the ailment that our text-books scarcely more than mentioned it. Now we know it to be one of the common ills of the female sex, and while we have largely perfected remedies looking to a riddance of its results, the question of prevention is yet before us. As a contribution in that direction, I beg, therefore, that you will accept this paper.

A CASE OF CONGENITAL UMBILICAL HERNIA; ABDOMINAL SECTION SIX HOURS AFTER DELIVERY; RECOVERY.

BY

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CLINICALLY, cases of congenital umbilical hernia (*hernia funiculi umbilicalis*) may be divided into two classes, viz.: those in which the hernia is reducible and may be retained by mechanical appliances, and those in which reduction and retention, either or both, are impossible. The first class is, as a rule, not attended by any serious difficulties in its management. The second class, fortunately rare, requires prompt interference to avert disastrous consequences. The great advances made in abdominal surgery have given surgeons greater confidence; and the radical operation for the cure of congenital umbilical hernia, by abdominal section, even in the new-born, has become a rational surgical procedure. I am not aware that the subject has been treated formally either in text-books or journals; and I have concluded to report a personal case, together with remarks, table of cases, and bibliography.

On July 27th, 1889, I saw at Schenectady, N. Y., with Drs. Marselius and Faust, a new-born female infant with the following history: Had been delivered six hours before. At the

¹ The small figures refer to the bibliography at the end of the article.

time of delivery an unusual condition of the cord was noticed, which, upon closer examination before its division, revealed the presence of a large umbilical hernia. A temporary ligature was thrown about the cord nearly eight inches from the abdomen. After delivery, Dr. Faust made an earnest attempt to return the hernia into the abdomen, but failed. The child presented a normal appearance in all respects, except that at the umbilicus there was a hernial protrusion the size of an orange. The walls of the sac were thin and translucent, and beneath could be seen the already congested intestine. Gentle taxis succeeded in reducing a portion of the hernia, but it could only be retained by the finger in the ring. At this time I was not familiar with the application of abdominal section in the treatment of similar cases. However, the indications seemed so clear that a radical operation was determined upon.

The infant was wrapped in a warm flannel blanket and placed on a table before a good light. Chloroform was given, and after complete anesthesia the sac was opened after the manner to be described later. The contents consisted of portions of the ileum, the ascending colon, and the cecum. The vermiform appendix, the size of a bean, was distinctly seen. The small intestine was immediately returned to the abdomen, but it was necessary to resect the peritoneal layer, the wall of sac about the cecum and colon, on account of firm adhesions. No hemorrhage followed. The ring, not more than an inch in diameter, was deeply transfixed by an encircling suture—a procedure I should not again adopt—and the wound dressed with bismuth and borated cotton, with a flannel binder over all. The child made an uninterrupted recovery.

Etiology.—The umbilical cord is formed after the first few weeks of gestation, from the urachus or pedicle of the allantois which communicates with the bladder from the vitello-intestinal duct, or the pedicle of the umbilical vesicle which communicates with the intestinal canal, and from a reflexion of the amnion, the latter forming a sheath for all.² Soon after the cord is formed the vitello-intestinal duct is normally absorbed, and the canal outside of the urachus and vessels is rapidly effaced from the chorion toward the umbilicus. At this period portions of the abdominal viscera lie in the canal of the cord, and recede into the abdomen only as the canal is effaced. When the vitello-intestinal duct remains patulous, it enters largely as a cause of umbilical hernia.³ These cases often terminate spontaneously in fecal fistula. Another case of umbilical hernia lies in the imperfect effacement of the canal of the

cord. The ring may be normal, smaller, or replaced by a considerable cleft of the abdominal walls. The hernia varies in size from a small egg to that of the fist. Other malformations—spina bifida, imperforate anus, talipes, phimosi, and adhesions of the labia—are common complications of congenital hernia. Dr. Jacobi⁴ reported a case in the New York Pathological Society wherein a large umbilical hernia occurred with spina bifida and imperforate anus. Adhesions of the wall of the sac to the viscera are very common.

The prognosis of irreducible umbilical hernia in the new-born has been very unfortunate when the cases have been left to themselves.⁵ The onset of peritonitis has been very rapid, and separation of the cord by gangrene takes place early, leaving the intestines free upon the abdomen.⁶ The exposed condition of the intestines, owing to the character of the sac, produces a condition of shock from which the little ones die early. If they are able to withstand or escape the shock and peritonitis, the cases terminate by fecal fistula at the seat of the hernia, to be followed by death from inanition.⁷ So far as I have been able to learn, a radical operation, immediately after delivery, for relief of umbilical hernia, has been performed nineteen times with seventeen recoveries.

No operation needs a special defence when employed in cases where the results without operation have been so unfortunate; however, there are certain indications for a radical operation for umbilical hernia which must be present before the surgeon is warranted in proceeding to so serious an operation as an abdominal section in the new-born.

I. The character of the sac must be such that delay will lead to its sloughing.

II. The hernia must be irreducible, and

III. If reducible, must be incapable of retention by suitable mechanical appliances.

When shall we operate? Delay of only a few hours often is accompanied by commencing gangrene of the cord and beginning peritonitis. Barton operated after thirty-three hours, when the cord was already very offensive and the intestines were covered with lymph. Hence the operation should be done at the earliest moment after delivery, and with unusual precautions to prevent shock and sepsis.

CASES OF ABDOMINAL SECTION FOR UMBILICAL HERNIA IN THE NEW-BORN.

No.	Operator.	Indications for the Operation.	Technique of Operation, etc.	Result.	Reference.	Remarks.
1	Dr. A. O. Lindfors, 1881.	Large hernia; could not be retained by compress and bandage.	Chloroform, thymol as an antiseptic, resection of sac, and suture.	R.	8	Child few hours old at time of operation.
2	Dr. Krukenberg, 1882.	Large hernia, irreducible.	Salicylic acid, antiseptic, resection, and suture.	R.	8	Age not stated.
3	Dr. Soudén, 1883.	Large hernia, irreducible.	Sac treated by encircling suture.	R.	9	Age not stated.
4	Dr. Felsenreich, 1883.	Hernia size of an apple; cleft in abdominal wall 8.4 cm. long; large and small intestine in sac.	Sac extirpated and sutured; iodine form dressing.	R.	10	Child two days old at operation.
5	Dr. Goodlee, 1883.	Hernia containing cecum, etc.; treated by compress until fourteen days.	Peritonitis existed at time of operation, cecum adherent; sac extirpated, and suture.	D.	11	Died three days after operation.
6	Mr. Treves, 1884	Hernia size of hen's egg; child in very bad condition.	Operation 60 hours after delivery; necessary to puncture intestine on account of distention. Operation same as in case 5.	R.	12	Died twenty-three days later from convulsions.
7	Dr. Caldwell.	Hernia size of an orange; cleft in abdomen 6 cm. long.	Wound closed by hardlip pins, followed by fecal fistulae.	R.	13	Fistulae closed after time. Child thirty-six hours old at operation.
8	Dr. Reuter.	Cleft 4.5 cm. long; large and adherent hernia. Peritonitis already ready.	Adhesions loosened, and intestines returned; sac extirpated; suture.	R.	14	No shock from operation.
9	Dr. Piperno.	Hernia size of child's head; cleft size of a dollar.	Operation done in cold room of farm house, with unskilled assistants, etc.	D.	15	Died the second day from shock.
10	Dr. Dunlap.	Great hernia of large intestine.	Sac removed and opening sutured.	R.	16	Child one hour old when operated upon.

11	Drs. Dohrn and Eckerlein.	Hernia size of hen's egg; child had six fingers on each hand.	Amnion resected and Wharton's gelatin removed, after which peritoneum was folded in and covered by skin.	R. 17	Wound healed by granulation very slowly.
12	Phenomenonoff and Stolyplinsky.	Hernia size of goose egg.	Chloroform and sterilized water. Inner wall of sac resected and returned to abdomen on account of adhesions to intestine.	R. 18	Child one hour old at time of operation.
13	Olslausen, 1887.	Large hernia; cleft in abdomen 4.5 cm. broad.	Same operation as in case 11.	R. 19	Wound healed slowly by granulation.
14	Thos. Bryant.	Large adherent hernia with translucent walls.	Same operation as in cases 11-13.	R. 20	Child well two years after operation.
15	Mr. Harries.	Hernia size of hen's egg, adherent.	Wound closed by encircling suture.	R. 21	Child but few hours old at time of operation.
16	Dr. J. M. Barton.	Hernia size adult fist, opening two inches in diameter.	Wound closed by harelip pins, sac excised.	R. 22	Operation thirty-three hours after delivery, commencing peritonitis.
17	Dr. C. Theims.	Large adherent hernia.	Not known, but an abdominal section.	R. 23	
18	Dr. Ronaldson.	Large adherent hernia.	Treated same as cases 11, 13, 14.	R. 24	
19	Dr. W. G. Macdonald.	Hernia size of an orange, contained both large and small intestines, adherent to sac wall.	Wall of sac resected, and part returned to abdomen; sac removed.	R.	Child is very vigorous two months later.

In all 19 cases, with 17 recoveries and 2 deaths. I have been able to collect from various sources 12 cases treated by the expectant method—*i.e.*, with compress and bandage—with 3 recoveries and 9 deaths.

As nearly every operator has employed a different method of operating, it might not be amiss to detail the technique of the operation which seems most rational. The infant should be wrapped in warm flannel, with artificial heat to the extremities, placed in a good light, and completely anesthetized, using chloroform. Anesthesia is necessary to control the spasm of the abdominal muscles. The abdomen and cord must be made thoroughly aseptic by the use of a two-per-cent solution of creolin or a one to ten thousand solution of mercuric chloride. The sac should be divided away and to the left of the umbilical vessels, between two artery forceps. First the external layer (the amnion) throughout its whole extent, after which the gelatin of Wharton, must be carefully cleared away. Then the inner coat (peritoneum) should be freely incised between artery forceps, being careful to avoid adherent intestine, and the hernia examined. All portions not adherent should be immediately returned to the abdomen, and the ring closed by a sponge wrung out in sterilized warm water. Portions of the adherent intestines should be relieved by resecting, if necessary, the inner wall of the sac—a procedure not likely to be followed by any considerable hemorrhage. Adherent omentum had better be ligated at once and removed. When hemorrhage is controlled, the intestines should be returned, and a small, flat sponge placed within the abdomen to keep the intestines from protruding and to prevent the entrance of fluids into the abdomen. The management of the sac will largely depend upon the size of the cleft. The entire sac down to the integument should be excised and the wound closed by through-and-through sutures of silk. The sutures should be introduced well back from the borders of the wound, so as to bring into good apposition the normal relations of the fascia about the umbilicus. Before tightening the sutures, the flat sponge should be removed. The line of incision should be well dusted with powdered boracic acid or bismuth, and dressed with plain borated gauze and cotton, with a flannel binder over all. It seems to me that iodoform as a surgical dressing for children ought not to be employed. My friend, Dr. Vander Veer, suggested to me the propriety of removing the vermiform appendix, which was clearly in sight. In one other case that procedure was successfully adopted.

I present, on pages 10 and 11, a table of cases treated by abdominal section, and the following bibliography :

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FOUR CASES OF EXTRA-UTERINE PREGNANCY.¹

BY

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IN acceding to the request of our secretary to prepare, upon short notice, a paper for your consideration this evening, I am denied the satisfaction of presenting to you a novel topic or the results of original investigation ; but in asking you to follow with me the histories of four cases of ectopic gestation

¹ Read before the New York Obstetrical Society, May 7th, 1889.

which called for operative interference, I am mindful of the keen interest with which this subject has always been discussed by our body—an interest enhanced by the lack of entire agreement of our views upon the subject, or of unanimity in the deductions we have each drawn from personal experience.

CASE I.—Admitted November 25th, 1887, E. K., age 20. Menstruation began at 14, regular in character; flow free and lasted eight days. Pain in iliac regions for two days prior to and during first two days of flow. Married at 15; a miscarriage at third month, eight months after marriage; no other pregnancy. Has had a continuous thick white and yellow discharge ever since marriage; no other venereal symptoms. Menstruated as usual for eight days in September. No menstrual flow in October. About November 1st began to have some pains across lower part of abdomen—pains of a sharp, shooting character, lasting an hour or two at a time and causing patient to “double up.” On November 15th a free bloody discharge from uterus began and has continued ever since.

Condition on admission: Fairly nourished; facies, anxious; color, pale; bowels obstinately constipated, and patient says there is a sensation of something “in the way” during defecation. Urine: Trace of albumin; no casts. Micturition difficult and painful. Uterus strongly anteflexed; fundus enlarged and softened; at left of uterus is a mass. Cervix patulous and soft. Temperature 99°.

Patient remained confined to bed until February 16th (three months), when she was allowed to go out for a week on a pass. During this interval in the hospital she suffered constantly from severe shooting abdominal pains; obstinate constipation, which required the constant and persistent use of enemata; painful and difficult micturition, and a dark, blackish brown, bloody uterine discharge. On January 4th it was thought that the mass at the left of the uterus was increasing in size, and a faradic current was applied as usual through the mass daily for ten days, without apparent effect in reducing the size of the tumor. Temperature ranged from 99°–101°.

February 23d, patient returned to hospital and now first came under my care. She was thin, pale, and with facial expression of much suffering. The abdominal pains had continued and were increasing in severity, as was also the difficulty with defecation and micturition.

Examination under chloroform: Uterus enlarged, anteflexed, and crowded toward right side of pelvis by a large mass at the left of uterus filling in the left side of the pelvis, bulging Douglas' sac well down into vaginal fornix, occluding rectum, and mounting about two fingers' breadth above pelvic brim.

Patient thinks tumor steadily increasing in size. Cervix soft and velvety.

Diagnosis: Ruptured tubal pregnancy with large intraperitoneal hematocele. Operation March 21st, 1888. Incision, four inches long, disclosed large tumor (the size of a child's head), encapsulated on all sides by firm, thick layers of plastic lymph and fibrin and by strong organized adhesions lying at left of uterus and crowding it strongly to the right. With the fingers the tumor was rapidly shelled out of its sac-like wall of adhesions and layers of organized lymph, which peeled off easily like the skin of an orange. The sac wall, adherent on all sides to intestines, broad ligaments, and uterus, was removed piecemeal. In separating the sac from intestines, the adhesions were so firm as to result in tearing the serous and muscular coats of the gut for some inches. This rent was immediately closed by ten Lembert sutures of iron-dyed silk. The broad ligament was then ligated along its base in mass sutures, carried by Thiersch's spindles, from the infundibulo-pelvic ligament to the cornu of the uterus. The right ovary and tube were held down by adhesions, which were torn up, but the appendages, apparently healthy, were left. The peritoneal cavity was flushed with hot water and a Keith's tube left for twenty-four hours. The recovery was wholly uneventful, union primary, and the patient discharged cured on April 15th.

Specimen, examined by Dr. J. S. Thacher, showed a rupture of the left tube following tubal pregnancy, chorionic villi being abundant in a shaggy patch on the tube walls. No embryo was found, though the large clots removed were carefully hunted over. The patient has now been under observation a year, and has remained in perfect health, working daily as a box-maker. Menstruation is regular. In this case the thorough and intelligent use of electricity for the purpose of destroying the embryo was followed by no evident amelioration of symptoms, which on the contrary continued to grow worse with an uninterrupted increase in the size of the tumor.

CASE II.—Admitted June 30th, 1888, Mrs. N. J., age 27. No history of syphilis. Menstruation began at 14, at first irregular, every two weeks; flow profuse and painful. Married at 22; had a miscarriage two months later; ten months later gave birth to child at term; two years and three months ago, another miscarriage at fourth month. Has had leucorrhœa as long as she can remember.

Menstruated as usual March 25th. Then did not "see anything" and felt in unusually good health till May 10th; then a little "splash" of blood was noticed, followed by considerable pain in iliac regions. Felt fairly well till May 24th; then had a sudden pain, followed by the discharge of a substance like a

piece of white flesh, with many small blood clots. The discharge of blood clots has continued ever since, and during this period she has had frequent attacks of nausea and vomiting, occurring nearly every day, and accompanied with severe cramp-like pains in the lower part of the abdomen, radiating down thighs. Has noticed localized tenderness of abdomen, and that abdomen has been increasing in size since March, also that breasts have become larger and hard. On admission, temperature 99.6°; urine, trace of albumin.

Examination under chloroform: Uterus enlarged, in anterior position, pushed somewhat toward left by a mass lying at its right; mobility diminished. This mass is about size of two closed fists, bulges in Douglas' sac and postero-lateral fornices of vagina, and partly occludes rectum. Cervix somewhat soft and velvety. Sound passes three and one-half inches, no bleeding. July 7th, mass at right of uterus is smaller and uterus more movable. Pains are less. July 13th, pains much more severe and mass seems larger. Diagnosis: Probable tubal pregnancy.

July 18th, operation. Incision three inches, disclosing mass size of two fists at right of uterus, the mass enclosed in thick adhesions; several large clots in peritoneal cavity. On separating adhesions, mass was found to consist of the right tube ruptured, the ovary, and a mass of partly organized blood clots with fluid dark blood in centre of mass. The mass was removed, and broad ligament ligated and cut away as closely to the uterus as possible, and the abdomen cleared of clots. The left ovary was fixed by adhesions, which were torn up; the ovary found to be greatly enlarged by multiple hematomata, and was, with its tube, removed. Irrigation and drainage with glass tube (Keith's). Tube removed at end of twenty-four hours. Recovery rapid and uncomplicated; union primary. Patient discharged cured at end of one month, and has since remained in perfect health. Specimen: Numerous chorionic villi found in patches near site of rupture of tube, about one inch from cornu uteri, *i.e.*, in isthmus. No embryo found.

In this case we note the fact of the persistence of symptoms and increase in size of the tumor for two months following the date of rupture of tube, which we can fairly place as about May 24th.

CASE III.—Admitted January 4th, 1888, Mrs. M. S., age 26. Menstruation began at 15, regular and painless; flow three days and moderate. Married at 20; two children, ages 5 and 3 respectively. No miscarriages. Leucorrhœa continuous and excessive for past year. Last menstruation ended December 20th, 1887.

Since birth of last child has had constant backache and bear-

ing-down pelvic pain, and pain in rectum, and persistent leucorrhea. At this time, at right of uterus and posteriorly a mass the size of an egg was found, fluctuating and tender, but somewhat movable; thought to be a hydro- or pyo-salpinx or cystic ovary. Patient was discharged "improved" on January 28th. After leaving hospital patient suffered constant bearing-down pains, and severe pains in iliac and hypogastric regions. A week after her discharge from the hospital there was a sharp metrostaxis lasting some ten days; many large clots were expelled, with severe abdominal pains, nausea, vomiting, and faintness followed by loss of consciousness. This recurred in July, with clonic spasms during period of unconsciousness. Patient had several of these attacks; cannot tell how many. September 29th, began to flow again, and since that date there has been a constant dark, bloody discharge, with almost constant abdominal pain, nausea and vomiting, fainting attacks, loss of appetite, flesh, and strength. Bowels constipated. Mic-turition difficult.

Readmitted November 5th, 1888. Urine normal. Examination under chloroform: Uterus slightly enlarged; lies anteriorly and deviated toward left; cervix lacerated, hypertrophic, but soft. Right ovary enlarged, prolapsed, and fixed. Right tube enlarged, fluctuates, and is fixed by adhesions. Left appendages massed in and fixed by adhesions. Diagnosis: Probable pyo-salpinx, double.

Operation November 15th. Incision three inches. Great omentum stretched over abdominal contents, passing over uterus like a curtain, and generally adherent. Separated by sponge pressure and ligation. Left tube and ovary freed from firm adhesions and removed (tube glued to ovary, which contained a small abscess; tube distended moderately by pus). Right tube and ovary liberated with much difficulty, necessitating enlargement of abdominal wound another inch; brought out intact (though tube was as large as the closed hand, and very thin), and removed. Irrigation because of free oozing from torn adhesions, and drainage tube for twenty-four hours. Recovery rapid and uneventful; primary union of wound. Discharged cured December 5th, three weeks later.

Specimen: Right tube was distended to size of closed fist, the dilatation being chiefly at the ampulla, where the fimbriae were found adherent to a very large and cystic ovary. The contents of this tube were partly fluid and partly solid, and in its widest part could be felt floating a small hard body about the size and shape of a kidney bean. On opening the tube, this little body was found to be attached by a small filament to the wall of the tube, and proved to be a disorganized embryo. Chorionic villi abundant at site of attachment of embryo. The walls of

the tube in places were almost the thinness of tissue paper, and seemed on the point of rupture.

"In this case again we have a pretty clear history of death of the embryo followed by months of illness, during which the symptoms increased in severity, and the extra-uterine fetal sac did not diminish, but on the contrary, to judge from its appearance, was distending and on the point of rupture.

CASE IV.—Mrs. A. P., age 32. I was asked to see this patient at her home on April 1st by Dr. C. N. Thompson, of this city, and the following history was elicited: The patient had been married twelve years; had borne three children, the last one six years ago. No miscarriages. Was perfectly sound and well up to two months ago, when she skipped her regular monthly period. At this time she began at once to have severe acute pain in the right iliac region, of agonizing, cramp-like character, and radiating down right thigh, causing cramps and twitchings in right leg. This was followed by frequent and severe nausea and vomiting, terrible pain on defecation and micturition. Two weeks ago patient noticed a swelling or hard mass in the right iliac region, and since that time she has had a constant metrostaxis, with fever, headache, and sweating. There has been constant throbbing in the region of the mass. Dr. Thompson had observed, during the forty-eight hours preceding my visit, that the upper level of the tumor had risen from two fingers above Poupart's ligament to three fingers above the umbilical line. No movement of the bowels could be effected, and the urine was passed with great difficulty and pain. She was at once removed to my ward at Roosevelt Hospital. She was profoundly anemic and exsanguinated; general condition very poor; poorly nourished. Temperature 102° ; pulse 120 and poor. Urine: Trace of albumin. A tumor of large size occupied the hypogastric, right inguinal, and lumbar regions, extending up to about three fingers' breadth above the umbilical line. There seemed to be a clear space in the region just at the left of the linea alba, and then another and smaller mass occupying the left inguinal fossa. Tumors of smooth contour and tense, doughy consistency, very painful to touch. Vaginal examination showed the pelvis filled on all sides with a tense mass bulging down into and partly occluding both vagina and rectum. Uterine body could not be defined. Cervix large, patulous, soft; discharge bloody and dark. Breasts contain milk. Diagnosis: Ruptured tubal pregnancy. Indication for operation, the evidence of continuing internal hemorrhage.

Operation: Incision five inches, followed by escape of some bright blood and some soft, dark clots, disclosed huge tumor,

very tense, of size described, with smooth, bluish-pink surface. The tumor was almost surrounded and overlaid by the colon and meso-colon, and covered in everywhere by thick, greenish-yellow layers of organized lymph. At left of tumor lay large, free, dark blood clots. An attempt was made to clear the mass from the colon, but the density of the adhesions encapsulating the mass rendered this impossible, as they were almost an inch in thickness and of fibrous hardness. Puncture with Tait's trocar let out some fluid blood, but it was necessary to lay open the sac, introduce the whole hand, and turn out the clots. Some pounds of soft clots were thus quickly shelled out, together with several large masses of organized tissue, one, placental with membranes, being as large as a mandarin orange. This was attached firmly to the sac wall formed by intestines and organized lymph and fibrin. Its removal was followed by alarming hemorrhage, which was controlled by large Keith lion-jaw clamps and by sponge packing. To the left of the large tumor, occupying the left iliac fossa and in front of broad ligament, was a large collection of soft blood clots which had evidently escaped from the larger tumor. The removal of these large masses left large, open sacs, with the intestines and sac walls as their boundaries. These sacs and the general peritoneal cavity were flushed with hot water, and I then (after the method of Miculicz) packed first the smaller cavity at the left iliac fossa, and then the right and larger sac, with iodoform gauze, stuffing it loosely and rapidly into all the nooks and corners, putting as much in as would fill an ordinary hat, and bringing the ends out through the lower angle of the abdominal wound—which was left open for one and one-half to two inches—together with the handles of the four Keith's clamps. No drainage of peritoneal cavity. The wound was closed rapidly, including all layers in the sutures. Time of operation, twenty-nine minutes. I scarcely expected to get the patient off the table, and hypodermatic injections of whiskey and strophanthus were given freely, followed by hot whiskey enemata, elevation of foot of bed, etc. The pulse could scarcely be counted. The patient soon reacted. The clamps were removed in twelve hours, and the gauze gradually withdrawn during the next two days. The patient suffered no pain and did not have a single unpleasant symptom. Her convalescence was as easy and natural as after the simplest operation, and in a little over two weeks she was about the ward, and is now well.

Specimen: Chiefly clots; well-marked placental cotyledons and membranes, but no embryo. No tube or ovary—probably left in sac wall below, as they did not come into view during the operation. The left tube and ovary were seen to be normal.

It is idle to draw deductions from such a small number of cases, but in all such cases there are facts that, carefully studied, ought to be helpful in shedding light upon the much-vexed question of the course and progress, the dangers and the proper treatment, of ectopic gestation.

In the cases I have presented it seems to me that the most significant and striking fact is this: that all danger to the patient does not cease with the death of the embryo, and this leads us naturally to the old query as to whether the destruction of the embryo by electricity is as radical and scientific a procedure as removal by primary laparotomy.

The use of electricity in Case I. was followed later by a large increase in the size of the tumor, and by such general deterioration and symptoms of such gravity as to demand operative interference. But the electricity was used probably some time after death of embryo and rupture of tube (*vide* history). No evidences of an embryo could be found, and it must have perished some time prior to operation, but the numerous chorionic villi gave indisputable evidence of the nature of the case.

In Case II., two months after the rupture of the tube and death of the embryo, operation was necessitated because of the increasing suffering and steady loss of health and strength.

In Case III. we have the curious history of all the typical symptoms of tubal gestation, and the discovery of the mass months before the operation, and during many months the history of repeated attacks of local peritonitis, frequent metrostaxis, constant suffering, and steady decline in health. Some of these symptoms were probably due to suppurative disease of appendages of other side (left).

In Case IV. we have apparently an abdominal gestation with death of embryo, and later hemorrhages so extensive and alarming as to seriously jeopardize the patient's life.

I have for a long time inclined to that view—which, as I am aware, is opposed by most of the members of this Society, and, so far as I know, is voiced by only one of our Fellows—which favors primary laparotomy and removal of the tubal ectopic sacs, as opposed to the use of electricity with a view of arresting the gestation; and this view is the result of a careful and thorough study of the entire literature of the subject, and a weighing of all the pros and cons, and is

not based upon my very small personal experience, though my own cases and personal observations have tended to confirm convictions previously arrived at. I would not for a moment be interpreted as making the above choice a general rule, for it would be nonsense to urge the general adoption of a capital surgical operation, as against the safe employment of electricity; but, given a skilful abdominal surgeon, it seems to me there can be but one choice.

In primary laparotomy for tubal gestation in these days, we have the absolute certainty of the immediate and entire removal of all danger by an operation which in skilful hands is relatively easy and safe; and to me it appears an unscientific and wholly unsurgical procedure for such men to resort to measures which, though they destroy the embryo, do not by any means grant to the patient the same positive immunity from subsequent dangers.

I have no time in the limits of this paper to examine the arguments, but of them all the statistical is to my mind the most fallacious and the least convincing. While I do not for a moment question the accuracy of the diagnosis of many of the reported cases of tubal pregnancy, and their prompt arrest and cure by electricity, yet to give credence to all or even many of them is to give to general and inexpert testimony a value which it does not deserve. There is no single symptom, and almost no group of symptoms, which lead us to diagnose an ectopic gestation, which may not have their origin in other conditions; and countless errors in diagnosis of this nature constantly occur at the hands of the very masters in this difficult field. How difficult, then, is it to accept much of what is put forth as statistical proof of the greater safety and equal efficiency of what is termed the American method of treatment by electricity.

As yet we have almost no statistics of the safety of the operation of primary laparotomy, but it is strange to hear men argue in favor of electricity because of its safety—men in whose skilful hands a primary laparotomy for tubal pregnancy would be as safe and simple as the operation for a hydrosalpinx.

Statistics will have, for a long time to come, but slight value, and what we need more is a careful study of the dan-

gers and complications which follow in the train of ectopic gestation, even after the embryo shall have perished, and especially the relation of large intraperitoneal hematoceles of obscure origin to ectopic gestation. Were a careful microscopical examination of these cases made, I believe that the proof of their origin in tubal pregnancies would, as in my own cases, often be found where it is now overlooked.

The question of the propriety of operating or of following the expectant plan after rupture has occurred, the patient having survived the primary hemorrhage and shock, and the effused blood having been shut in by encapsulation, is an interesting one, and one that offers much to be said on both sides. Each case must be judged on its own merits. In three of my cases, probably the patients would have lived and perhaps been cured without operation; but their very existence was embittered by their sufferings, and their usefulness wholly impaired. I succeeded in at once restoring them to health and activity, and they were cases which could not spare themselves for long periods, nor incur the possible risks of suppuration, etc. In the fourth case operation was imperative to save life.

In regard to the treatment of these large intraperitoneal hematoceles, it seems to me that the following are the essential points: Strict asepsis, rapidity of operation, thorough removal of clots and débris, arrest of hemorrhage. If there is no pus the risk of infection is slight. If there are large dead spaces or empty sacs left, we have in the method of Miculicz—*i.e.*, packing them temporarily with gauze—a simple and efficient method of treatment.

In my fourth case the removal of the placenta was against the rules formulated from experience, and was, moreover, accidental. I succeeded, however, in arresting the hemorrhage from its site by clamps and pressure, and the cure was correspondingly more rapid and satisfactory.

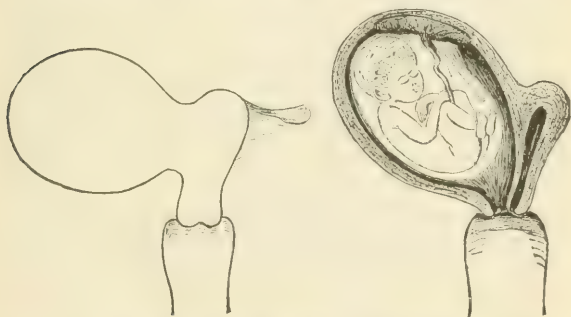
PREGNANCY IN THE RUDIMENTARY HORN OF A BICORNATE
UTERUS MISTAKEN FOR TUBAL GESTATION;
LAPARATOMY; RECOVERY.

BY

PAUL F. MUNDÉ, M.D.

(With two woodcuts.¹)

DURING the month of May, 1889, a patient was sent to my service in Mt. Sinai Hospital with a diagnosis of extra-uterine pregnancy. I take no diagnosis for granted, but after examination I concurred in this one. The woman had had one child several years before. She had last menstruated four months



before. There were the usual signs of pregnancy. A tumor of the size of two fists extended over toward the right side. It was readily mapped out by bimanual manipulation, for the abdominal walls were very thin. A small mass could be felt projecting from the left side of this tumor, which I took to be the fundus uteri. I felt so sure of this that I introduced a sound into it, and it entered barely three inches to the left. The mass on the right was elastic, but had not the feel of the pregnant uterus, and did not contract under

¹ It seems almost needless to say that the cuts are entirely diagrammatic, and represent merely the general features of the case. The relations of cervix and vagina to the body of the uterus are particularly badly shown; the attachment of the vagina to the cervix should be much higher.

examination. The woman had had a bloody discharge at intervals, and pieces of membrane were said to have been passed. There had been much pain in the tumor on the right side for at least a month, so much that it had led her to consult a physician. I unhesitatingly made a diagnosis of tubal pregnancy, although I must confess that the connection between what I took to be the dilated tube and the uterus seemed to be rather a large one.

Fearing rupture, I obtained the consent of the patient and her friends to an operation as soon as possible, and did laparotomy on Sunday morning, two days after I first saw her. I was much surprised, on passing the hand into the abdominal cavity, to find that the peculiar irregularity of the tumor had disappeared, and that nothing could be felt except what seemed to be the normal pregnant uterus. I was rather nonplussed; had the sound passed again by my assistant, and it went to the left side to the depth it had entered the same side before. I asked myself, What can this be—an interstitial pregnancy? That was the only thing which occurred to me in explanation—a condition quite as dangerous as tubal pregnancy. I therefore decided to remove the amniotic fluid by aspiration, draw the uterus out of the abdominal cavity, open it, remove the ovum, and sew the horn of the uterus to the abdominal wound. At the first attempt at aspiration I struck the placenta (as the specimen afterward proved). Two more aspirations were made, and about one half of the amniotic fluid was removed. In order not to prolong the operation, I lifted the uterus out of the abdominal cavity, when it was observed to be apparently normal in outline. I had the sound passed again, and it went to the *right*, to the very point where I had aspirated. Then the assistant who passed the sound said that he felt the septum of a two-horned uterus; and that is what the deformity proved to be.

In catching up the uterus with the vulsellum, quite a rent was torn in the peritoneum, which was closed with catgut sutures. The punctures made by the aspirating needle did not bleed and were not sewed. The uterus was returned, the abdominal cavity closed, and, as was expected, the patient miscarried that night. The specimen showed a large blood clot at the surface of the placenta where I had aspirated. The temperature did not rise above normal, and the woman made

a rapid recovery. Subsequent examination with two sounds confirmed the presence of the uterine septum.

The cervix was lacerated on the left side, which shows that the previous pregnancy was on that side; this fact, in conjunction with the more or less constant pain in the pregnant right horn (which in a normally developed uterus would scarcely be present), leads me to believe that the right horn was in a state of rudimentary development and might have burst before long. Several such cases are on record.

I do not see how I could have made the diagnosis in this case unless I had accidentally passed the sound into the dilated pregnant right horn. I therefore think that the diagnosis of tubal pregnancy cannot be made with as much certainty as we may sometimes suppose. Fortunately this case turned out well, except that the fetus was lost.

A reference to Dr. Vander Veer's article in the last November number of this JOURNAL (in the table of which this case is mentioned) will show how frequently a similar error has been made, even by leading gynecologists.

THE IMPORTANCE OF DRAINAGE IN THE TREATMENT OF DISEASE OF THE UTERUS.¹

BY

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MANY years ago, McIntosh, of Edinburgh, advocated and practised gradual dilatation of the cervix uteri with rectal bougies for dysmenorrhea, etc. Simpson, Greenhalgh, Sims, and Peaslee devised different methods of dividing the os uteri for dysmenorrhea and flexions. About 1871, Ellinger, of Germany, and Dr. John Ball, of Brooklyn, devised steel dilators, and advocated and practised rapid dilatation in place of sponge tents, or tents of any kind, and cutting or dividing the cervix.

¹ Read at the meeting of the New York Obstetrical Society, May 21st, 1889.

Dr. Ball's instruments and methods are almost identical with those comparatively recently recommended and known as Goodell's.

Previous to Dr. Ball's papers read in Brooklyn and at the New York State Medical Society, 1871, advocating rapid dilatation with a two-bladed steel dilator, the late Dr. J. Marion Sims practised his well-known method of dividing the os externum and internum with a uterotome and putting in a plug of cotton saturated with a solution of subsulphate of iron. This was, in the hands of Dr. Sims, usually a very successful operation in cases of dysmenorrhea and sterility ; but he was impressed by Dr. Ball's papers, and some years later he combined dilatation—or I should say divulsion—of the os uteri after he had divided both the os externum and internum with his uterotome. This enabled him to get his plug through the os internum in cases where it could not be done unless the knife was freely and at considerable risk used to divide the os internum. He found the combined method more certain to relieve the dysmenorrhea, and he practised it up to the time of his death.

In certain obstinate cases he would insert a straight plug or stem pessary instead of the plug of iron cotton, his idea being to combine the advantages of a stem pessary and permanently straighten the uterus. After 1876 I was closely associated with him in his work in New York, and I proposed that he should have his plugs, or stems, made of hard rubber with a groove in them, the object being to combine the advantage of drainage with dilatation of the canal. I had these drainage plugs made, and have since then always used them. I had them made with a slight anterior curve, for I was satisfied that it was the dilatation and *drainage* which cured the dysmenorrhea, and that straightening the uterus had little or nothing to do with the cure.

In my service as an interne at the Woman's Hospital, and when associated with Dr. Sims, I had the opportunity of seeing the disastrous results from damming up the uterine canal with sponge tents and tampons, etc. Aside from preventing the escape of the secretions, acting as an irritant they caused hypersecretion and usually brought on forcible uterine contractions ; and as the fluid could not escape by the os, it was forced out

by the Fallopian tube, and caused many of the numerous cases of so-called cellulitis, which we now know to be, ninety-nine times out of a hundred, merely a local peritonitis about the tube and ovary.

For several years after 1876 Dr. Sims was very unpopular in New York, and he became very sensitive to criticism and had what seemed to me to be an abnormal dread of hemorrhage after operations, and invariably, after dividing the os uteri, would put in a tight vaginal tampon. Believing in the importance of drainage, I always objected to the use of tampons of any kind, except in cases of dire necessity, and then would always remove them in a few hours, if allowed to do so.

In 1882 I began to teach in the New York Polyclinic, and obtained a service as gynecologist in Bellevue Hospital, and advocated the use of the steel dilators, not only for the relief of dysmenorrhea and sterility (see AMERICAN JOURNAL OF OBSTETRICS for September, 1883, on "Anteflexion of the Uterus, its Etiology and Associated Pathological Conditions"), but claimed and practised that all intra-uterine treatment should be preceded by an antiseptic vaginal douche, and *the rapid and free dilatation of the uterine canal in all cases where intra-uterine treatment was indicated*—the aim being not merely to enable me to make a thorough intra-uterine application, but, what I considered of much greater importance, to secure perfect drainage of the uterine canal. In all cases where the uterus is indurated and the canal small, I advocate not only dilatation, but the use of my drainage plug to make sure of drainage, whether there be dysmenorrhea or not. I would keep the cases under observation, and by using cotton pledgets saturated with a solution of boroglyceride one part, alum one-half to one part, and Price's glycerin 14 parts, placed in the vagina twice a week, I would reduce subinvolution, soften out indurated tissue, and improve the circulation of the pelvis; and after several weeks, if the uterus became movable and there were no signs of disease of the Fallopian tubes and ovaries, in all forms of uterine catarrh, etc., I would dilate the uterine canal freely, and make applications of pure carbolic acid to the fundus through my cervical protector. In all cases needing curetting, I invariably preceded the curetting by the use of the steel dilators.

I protested against the use of all kinds of uterine tents and

vaginal tampons as violating, next to cleanliness, the most important law of surgery—namely, drainage. These views were severely criticised by my colleagues, and one of them told two of my patients that I was a dangerous man to visit, because I was daft on a new steel dilator with which I split up the uterus of all my patients. This man has had some success, but he is not a leader, and three years later, in an open meeting of a society, he said that my dilator was the best of the kind, and that he always kept it on his office stand and used it almost every day.

To-day dilatation and divulsion of the os uteri with steel dilators has practically no opposition; but drainage of the uterine canal is not properly recognized and practised, for some of our most eminent men still advocate sponge or other tents for dilating the canal, and practise and teach the use of the vaginal tampon. For many years I have taught that the sponge tent should rarely, if ever, be used, and that when a gynecologist is as good a surgeon as he ought to be he will not use the tampon either in the os uteri or the vagina, except temporarily in very rare instances.

I have often been asked how I succeed in dilating the os uteri in certain cases—say, where it is desirable to insert one or more fingers into the uterus. In almost all cases, such as those dilated for dysmenorrhea, curetting, etc., all that is needed is to take time with my modification of Sims' uterine dilator. Where the uterus is large, pieces of hard rubber made to fit in the ends of the steel dilator may be of use in increasing the size of the dilator. In rare cases, such as where I may wish to dilate the uterus to get at a large intra uterine fibroid, instead of resorting to the sponge tent (I know that cleanliness, and the use of iodoform mixed in the mucilage used in making the tent, somewhat lessen the danger of sepsis, but anything that plugs the uterus for twelve or twenty-four hours may force the accumulated mucus or blood in the uterus into the peritoneum through the Fallopian tubes), after washing out the vagina with a solution of bichloride, I take a large-sized colpeurynter, smear it over with vaseline and iodoform, and introduce it into the vagina; then pump it full of hot water, 115°, till the upper part of the vagina is fully distended; every hour or two the water is allowed to escape, so

as to let out accumulations from the uterus and bladder. Again the colpeurynter is distended, and again emptied, until the os uteri is not only softened, but sufficiently dilated to admit my index finger; then I introduce a Barnes rubber dilator, and in a few hours I can open or dilate the os uteri to any desirable extent. The colpeurynters or dilators must not be kept in over one, or at most two, hours, or they may act as a tent or tampon and prevent drainage.

To obviate the vaginal or uterine tampon I use pressure forceps on the large vessels, and use intra-uterine hot douches, 120° (*exact*, not guessed-at temperature of 120°), after dilatation, and with very rare exceptions never fail to control any uterine hemorrhage. In the past three or four years, doing about three hundred and fifty gynecological cases a year, I have not, so far as I can recollect, used a tampon once.

Many cases of chronic uterine catarrh which, under the old treatment of pessaries, hot water, and iodine, are but little benefited, can readily be cured by free dilatation, and the use of a simple intra-uterine application of pure carbolic acid, properly made through a tube or cervical protector to prevent the acid on the applicator being rubbed off upon the cervix uteri. The most obstinate case can be cured, where simple dilatation fails, by divulsion and the use of a hard-rubber drainage tube. If the mucous membrane is thickened or hypertrophied, it should be thoroughly curetted before the intra-uterine application is made. This will obviate the use of strong acids, such as chromic and nitric, or the cautery, and leave no scar to give new trouble in the future.

CONCLUSIONS.

1. Perfect drainage of the uterine canal is of the utmost importance in all diseases of the endometrium.

2. It has been practically overlooked by gynecologists and its importance disregarded in treatment.

3. That it can best be secured by free dilatation by means of a steel dilator used once a week, not too near menstruation, and supplemented by hard-rubber drainage plugs, curetting and intra-uterine applications if indicated.

4. That in many cases to-day being treated by the use of pessaries, and called cases of anteversion and retroversion and

flexions, all symptoms can be permanently cured in a few weeks by the use of the dilator, the drainage plug, curette, and simple intra-uterine applications properly made.

5. That sponge or other tents left in the os, and obstructing drainage for more than a few hours, should never be used, for they not only obstruct drainage, but are liable to cause uterine contractions, and force the contents of the uterus out through the Fallopian tubes, and cause local peritonitis, etc. By the use of a colpeurynter to soften the os uteri, it can be rapidly stretched by dilators or Barnes' rubber bags without interfering with drainage.

6. That the same objections are applicable to vaginal or uterine tampons, so frequently used to stop uterine hemorrhage, as have been made to the sponge tent, and that by the proper use of hot intra-uterine douches of 120° after dilatation, or by tying or compressing with forceps the circular or other larger arteries, with very rare exceptions all uterine hemorrhages can be controlled; and if a tampon is used, it should be left in place only a few hours, and of course be prepared by being soaked and squeezed out in a solution of bichloride of mercury or some reliable antiseptic.

7. That, with few exceptions, the many cases of chronic uterine catarrh treated by the use of hot douches, rest, and iodine to the vaginal vault, can be readily cured by, 1st, improving the circulation of the pelvis by means of boroglyceride and alum solution applied twice a week on long, firmly rolled cotton pledgets; and, 2d, by dilating with a steel dilator about two or three times a month, and properly making simple carbolic acid intra-uterine applications, and, if indicated, the use of the curette and hard-rubber drainage plug.

8. That the same treatment will give better results in those obstinate cases of chronic uterine disease in which the use of chromic acid, nitric acid, and other strong caustics, or the actual or galvanic cautery, has been resorted to.

JAUNDICE DURING PREGNANCY.¹

BY

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JAUNDICE is spoken of as constituting a distinct form of disease, and as such its diagnosis is easy; we have only to look upon our patient to know what the trouble is. It may proceed from a variety of causes, physical and mental—grief, fear, crude and indigestible substances taken into the stomach, miasma, exposure to high temperature, with pain, nausea, languor, and lassitude. This is the general train of symptoms which precede and attend idiopathic jaundice, and in perhaps a large majority of cases gastric derangement is a precursor of the attack, which is followed by the production of depraved chyme, between which and the bile, when it reaches the duodenum, there is no affinity. Hence the bile ceases to flow into the duodenum, not from any obstruction, but because there is no longer any attraction for it in the duodenum, and hence the biliary secretion is suspended. The shade of yellowness is different in different persons. Those who are pale and fair present a bright lemon color; those who are florid, or who are flushed with fever, will present a darker shade of yellow; while those suffering with any disease causing an imperfect arterialization of blood will be apt to be of a greenish hue. The latter, whether from imperfect circulation or from a greener color of the bile itself, is supposed to be the most unpromising. Jaundice, however, depends upon various and very different morbid conditions, which at times are involved in very great obscurity. It is to one of these morbid conditions, that of jaundice occurring during pregnancy, to which I wish to invite attention this evening.

There is of course the same characteristic yellowness of skin, owing to the presence of bile, or at least of its coloring

¹ Read before the Washington Obstetrical and Gynecological Society June 7th, 1889.

matter, in the circulating fluid, and the deep color of the urine is derived, no doubt, from the same source ; while, on the other hand, the paleness of the feces is ascribed to want of bile, which is usually found in healthy and natural excrement.

It is hardly necessary for me to try to show how bile or its coloring matter comes to be present in the blood. The general opinion, and perhaps the correct one, is that the bile, after being secreted, is reabsorbed and carried into the circulation and to the parts in which the change of color is observed.

One of the anatomical peculiarities of the liver should not be forgotten, and that is that it is supplied principally with venous blood, the hepatic artery supplying but a small quantity in comparison with that which is received from the portal system ; and the bile, unlike all other animal secretions, is produced from venous blood which has already become contaminated by circulating through the capillaries of the stomach, spleen, pancreas, intestines, etc., and may be supposed to contain disorganized and effete ingredients.

The complete suppression of bile produces symptoms analogous to those which follow the suppression of urine, and the patient dies in a comatose condition. It would, therefore, appear that bile is not necessary or useful as a secretion, but is destined, like the urine, to be eliminated and discharged. Dalton, however, claims that this is not correct, and shows by experiment that bile is necessary for animal life—not only that it be secreted and discharged, but that it be discharged into the intestine and pass through the tract of the alimentary canal. In his experiments on dogs, fistulous openings were made into the gall bladder and the bile allowed to discharge externally, no part of it entering the intestinal canal. He says : “There was constant and progressive emaciation, which proceeded to such a degree that nearly every trace of fat disappeared from the body. The loss of flesh amounted to nearly one-half the weight of the animal. There was also a falling-off of the hair and an unusually disagreeable odor to feces and breath. The appetite remained good, and digestion was not interfered with ; there was no pain, and death took place at last without any violent symptoms, but by a simple and gradual failure of the vital powers.”

The appearance of jaundice in the pregnant woman is

usually explained as being most probably due to pressure on the ductus communis choledochus by the enlarged uterus, and by the transverse colon, which is not infrequently found at this time to be filled with feces. But if this is the true cause, why is jaundice not an accompaniment of all pregnancies? Mental emotion, I have no doubt, bears an important part in producing this disease, especially during the early months of gestation, for it is then that so many women become extremely nervous, and are sensitive to the slightest impressions, and not infrequently become depressed. It would be more reasonable to suppose that where the patient had been in poor health, either before she became pregnant or during the early months of gestation, the liver, owing to its proximity to the disturbing factors, suffering local congestion and other abnormal interference with its function, would be the organ most likely to yield to the pressure put upon it.

The puerperal state is ever one of care and anxiety. It is a well-known fact that diseases which, in the non-pregnant condition, are innocent in themselves, become during pregnancy the cause of most serious care. Jaundice is one of these. It can scarcely be said to be dangerous except to the pregnant woman, and to her it becomes one of exceeding gravity. The question might well be asked, Why is jaundice so prejudicial to the pregnant female? Is it only functional in character, only because of the substitution of blood deficient in some of the elements of nutrition for that of a more healthy character? Or must we look for a deeper-seated cause, arising in organic change in the liver, thus causing a contamination of the circulating fluid by noxious material which, in consequence of the failure of some important emunctory function, has not been eliminated, causing a true blood-poisoning? And if this latter be true, what is this poisonous principle which, during pregnancy, is so exceedingly dangerous to both mother and child?

It has been shown by Ellison, Bright, Lloyd, and others that an immense amount of fatty matter is sometimes discharged from the bowels during an attack of jaundice, which may, in a measure, account for the increased quantity of cholesterin found circulating in the blood during this disease.

Dr. Nelson, of Charlottesville, Va., says "cholesterin is in-

creased in quantity during pregnancy, and that if, in addition to the increase of this noxious element and the general hyperemic condition of the pregnant female, the secretory function of the liver be arrested from atrophy, glandular degeneration, or any other cause, we have all the conditions necessary to the worst form of cholemic eclampsia."

Flint claims that the real cause of coma in cholemia will be found in the direct action upon the cerebro-spinal system of some poisonous element of the bile which the liver has failed to eliminate, which accumulates in the blood, and by its action on the brain produces coma, and may, and no doubt does, produce convulsions by its action upon the spinal cord and medulla oblongata, giving rise to true cholemic eclampsia.

Dalton says "cholesterin resembles the fats in many respects, but is not saponifiable by the action of alkalies; that it originates in the substance of the brain and nervous tissue, is absorbed by the blood, conveyed to the liver, and discharged with the bile into the intestine, where it is supposed to be transformed into some other substance, as it is not discharged with the intestinal fluids."

Great conflict of opinion seems to exist upon the clinical and prognostic significance of jaundice in pregnancy.

Playfair says that "jaundice may occur during pregnancy without any unfavorable or untoward results," while Dr. Roberts claims that it is highly dangerous.

Watson says that "icterus occasionally comes on during pregnancy, and disappears after childbirth," while Meigs tells us that any form of toxemia occurring during utero-gestation might be said to be a dangerous complication.

Bedford does not regard jaundice as a disease of peril, but says "the same thing cannot be said with regard to the integrity of the gestation. Miscarriage and premature delivery are apt to ensue; the system is thrown into perturbation by the presence of an element in the blood well calculated to interrupt the harmony of action so essential to healthy and safe gestation."

Dr. Charles E. Smith, of St. Paul, Minn., gives a synopsis of ten cases of jaundice occurring in pregnant women at a time when there were an unusual number of non-pregnant persons suffering with the disease. He says "the product of

conception was lost in all but one case, and that three of the mothers died, all by coma, while in almost every instance in the non-pregnant the disease yielded readily to treatment."

Prof. Lebert, of Zurich, reports seven cases, of which five proved fatal, but he does not state whether the children were born alive or not.

Dr. Chamberlain, in the *New York Medical Record*, 1871, reports a case in which the disease commenced with diarrhea and vomiting twenty-four hours before labor began, at which time a disease of the liver did not occur to him; that after delivery there were mania and sopor, and death occurred on the second day post-partum; that "the child was in a semi-narcotized condition for six weeks, with persistent constipation, and a sulphurous odor from the skin."

Bedford, in alluding to a very fatal form of jaundice which occurred on the island of Martinique in 1858, says: "The termination of the disease was almost always fortunate except where pregnancy existed. The disease always assumed but one grave form, always the same, always fatal—the comatose form. Among thirty pregnant females affected with jaundice, ten only arrived at the completion of pregnancy; the other twenty died in coma after abortion or premature labor. Until the commencement of coma there was nothing peculiar to note. Almost all of the twenty children were dead-born, a few lived for an hour or two, only one survived; none of them were jaundiced."

From the foregoing it might be said that although bile and cholesterin are essential to health, and when circulating through legitimate channels do no harm to the system, let them become displaced and travel in channels to which they do not belong, and very soon disquiet and commotion assume the place of healthy action. The failure of the liver to eliminate the poisonous elements of the bile, constituting cholemia, or of the kidney to eliminate the urea, constituting uremia, gives rise to blood-poisoning as surely as the absorption of pus or the inoculation of the system with variolous matter.

The symptoms of blood-poisoning cannot be explained by mere compression; if so, the relief afforded by emptying the gravid uterus would remove the malady. Such, however, is

not the case, as fatal symptoms do not occur, as a rule, until after delivery.

Every case of jaundice occurring in pregnancy should, therefore, be looked upon as a serious one, jeopardizing both mother and child. It would seem probable that a simple catarrhal jaundice occurring from exposure to cold, from indigestion, from pressure, etc., is changed for some reason into a disease of a more malignant character, terminating not infrequently in abortion, coma, and convulsions, and proving fatal in a majority of instances to both mother and child.

The death of the fetus and its expulsion should not surprise us when we remember that the only source from which it can obtain sustenance is loaded with poisonous elements; and as the death of the mother rarely ever occurs until several hours after the expulsion of the fetus, there seem good grounds for believing that her death is due in many instances to shock, caused by labor, on a system already brought down by impaired nutrition and impoverished blood.

The following interesting case occurred in my own practice:

Mrs. R., 31 years of age, pregnant for the fifth time. Former labors perfectly natural. Has had several slight malarial attacks since last confinement. For the first three months, this time, there was nausea and vomiting to a far greater degree than ever before, scarcely a day passing without considerable discomfort from this cause. During the fourth month there was no particular indisposition. About the beginning of the fifth month she had a slight malarial attack, which gradually passed off, to return about the beginning of the sixth month in an aggravated form; the fever, remittent in character, gradually grew worse until the seventeenth day of the sixth month of pregnancy, when there was noticed for the first time a slight yellowness of skin and conjunctivæ, which gradually deepened in color until it assumed a greenish hue.

There was now a very decided gastric disturbance, nausea, vomiting of a dark bilious matter, pain, especially in right side and shoulder, constipation, violent headache, and a loathing of proper food, but a craving for pickles and acid fruits. She was violently ill for six or eight days, and then gradually improved, so that by the fifteenth day the jaundice had entirely disappeared and she was nearly well again. On this fifteenth day after the jaundiced condition was first noticed, the sixth month of pregnancy having been completed but a few days, labor came on, and after six hours she was delivered of a

female child, premature by nearly three months and weighing a little less than two pounds. The child moaned feebly and swallowed with difficulty the few drops of fluid placed in its mouth, and acted as well as looked premature. It gradually improved, so that by the third day it was able to take nourishment from its mother's breast, which it continued to do for two weeks; and then the milk, disagreeing with the child, was examined and was found loaded with bile, so much so as to give it a yellow color. A wet-nurse was employed, but the child died when twenty-one days old. The mother gradually improved, and has since passed through two pregnancies and confinements without any unpleasant accompaniments or results, the last confinement occurring on the second day of last March.

STERILITY AND DYSMENORRHEA CAUSED BY FLEXIONS, AND THEIR TREATMENT.¹

BY

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I HAVE classed the treatment of these two conditions together, because I have found that in the majority of both cases dilatation has proved to be the correct form of treatment. In other words, dilatation has, in my practice, brought about a condition of normal painless menstruation in sterile married women who have, perhaps for years, always suffered more or less from dysmenorrhea, and has placed them in a condition where the normal physiological functions of child-bearing may and probably will take place. The term sterility is used to designate that condition in the female where the genital organs, from some cause or other, are incapable of accomplishing their normal function. Either ovulation or conception cannot take place. This distressing condition may be caused by disease, malformation, want of evolution of certain parts, or mechanical obstruction.

Before beginning treatment for sterility, it is always well to

¹ Read before the New York Obstetrical Society, April 16th, 1889.

ask your patient a few questions regarding her husband—his occupation; whether he is a healthy man; was he an industrious man before marriage, or not; is he old or young; was he married before, and if so, did he ever have any children; is he one of a large family; do you know whether he has ever had inflamed testicles? All these questions should be asked, and if the answers are comparatively favorable then we may have reason to suspect that the woman is at fault. If for any reason you suspect the husband, have him come to your office, examine him carefully, and see if there is anything the matter with him. For it may happen that the man may be sterile; he may have a seemingly normal emission, and yet that emission contain no spermatozoa whatever; or he may have very few spermatozoa in the fluid. It may be that, though there is an abundance of spermatozoa, they are dead. Still another condition may exist: the man may be partly impotent. I mean by this, he may be unable to accomplish the sexual act thoroughly, erection ceasing before ejaculation, and the woman not be aware of the fact. As a rule, men are extremely reticent about acknowledging any sexual deficiencies, and for that reason it is better to ask to see the husband. Dr. J. Marion Sims, in his work on "Uterine Surgery," published in 1873, states that he always examined the husband on these points, and unless some definite trouble, either mechanical or organic, was apparent in the female, he even went so far as to have the spermatic fluid examined by the microscope. If I can find no reason why either should not have children, I then begin the treatment of the woman. When the female organs are at fault, the sterility may be the result of one of many causes. All I intend to take up in this paper, however, is the treatment of sterility and dysmenorrhea as caused by certain conditions, namely, flexions, as I have seen them in my own practice. Patients come to me complaining that they have been married five or more years, and that they have never been able to bear children; they and their husbands are well and strong, but in spite of all they not only are childless, but they suffer extremely during menstruation. Usually they are women in the prime of life, do not have to work hard for a living, are not exsanguinated, and to all appearances it would seem strange that they have not become pregnant. One class of patients tell me that they have

had one child or a miscarriage during the first year of married life, and have never become pregnant again. This is a condition of sterility from acquired causes, in contradistinction to sterility from congenital causes. Dr. Sims, in his work, speaks of an acquired sterility—that is, a woman may have had one child (child perhaps dead) and never have any more. This condition may arise from a laceration of the cervix and the consequent erosion setting up such irritation in the circulation of the uterus that an endometritis or cervicitis follows; and should she chance to become pregnant again, abortion is liable to occur. Endometritis is again liable to follow the abortion, and so the circle is kept up. Of course I am perfectly aware that this is not true sterility, but the results to the mother are the same unless the morbid chain be broken.

I wish to bring before the Society my method of treatment and the results which I have obtained, and will present the histories of a few typical cases:

CASE I.—A. B. called at my office in 1885; native of United States, age 23, single. She was slightly built, rather pale, but in fair health; she complained of feeling always tired, and never got up rested in the morning; great pain in the back and hips, and could not be on her feet very long without giving out. She had a good pulse, and bowels moved regularly. The *main* thing she complained of was intense pain just before and during menstruation. The periods often lasted but one day, and sometimes she had no show whatever.

On examination of the uterus I found it completely ante-flexed, so much so that it represented the shape of a horseshoe, somewhat firm in its position, but not fixed; very tender; with an acrid discharge flowing from the os uteri; acute cellulitis and vaginitis. The hymen was intact, but could be stretched without rupture. I carefully stretched the hymen by my finger and a Sims speculum, and packed the vagina with cotton tampons soaked in the usual mixture of iodine and glycerin.

This treatment I kept up (seeing her twice a week) for about three weeks and until all inflammation had disappeared. Then, placing the patient on the back, I caught the cervix with the tenaculum firmly and steadied it, and began to dilate with the Hanks small-sized dilator; this I continued until I had run up four sizes in one treatment. As I gradually forced in the dilator, I pressed the fundus up with a ball of cotton on a pair of forceps until it was two-thirds of the way up; then I removed the cotton pressure and pressed on

the abdomen until the dilator was pushed in clear up to the hilt. Holding each dilator in for a short time, I removed it and finally packed with cotton pads, letting the patient wear them until the evening of the second day; then they were removed and the vagina douched, also douched again next morning; the same day she came again, and the application and packing was removed and the same after-plan followed. This treatment I employed, increasing the size of the dilator up two numbers every time (unless the patient suffered too much pain from it), until the largest size was used. After I had gotten up to the largest size, at the next visit I always started from the middle sizes and increased to this same large size. If the contraction was very great about or above the internal os, then the Wylie or Sims dilator was used, as the pointed end of the Hanks dilator did not dilate so well. I continued this treatment for about six weeks, and every day I could see the patient improve. After the uterus had assumed nearly its normal position, I fitted her carefully with a Thomas anteversion (saddle) pessary and told her to come on the third day. I found all well at her next visit. I saw her again about the tenth day, and she still suffered no inconvenience from the pessary. Later on she called again and said she had had her period, lasting about four days, without any pain. In other words, she was perfectly cured of her dysmenorrhea. She further said that the pain in back and hips had all left her, and that she could walk or stand all day without getting tired.

I lost sight of the patient for some time, though hearing from a friend that she continued well. In 1888, she called again at the office and said she had been married for two years. Husband strong and healthy, native of United States, age 29. She suffered from all the old symptoms, but not to any such degree as before. She had removed the pessary, and had not worn it for a year. She had had no children, which was a great source of disappointment to herself and husband. I examined her again and found the same anteversion and inflammation existing, only in a less degree. I put her through the same course of treatment, dilating the uterine canal from time to time until the dilatation had almost reached the size of my little finger, using the rubber dilators, telling her not to have connection with her husband until I was through with the treatment. This I continued for some two months and then dismissed her. When she left the office, there was no inflammation, the uterus was up in position, and she was wearing the Thomas anteversion pessary. In two months she returned to the office pregnant, having become so directly after her first period following the treatment. Gestation went on normally, and on September 15th, 1888, she gave birth to a healthy female baby of about six pounds.

CASE II.—Mrs. S., born in New Jersey, age 28; married nine years; first flow at 12 years of age; husband strong and well, age 37. Patient came to be treated in April, 1887, for dysmenorrhea, pain in hips, and particularly in right iliac region, low down. Patient is in good health, but not strong-looking. On examination I found the uterus anteflexed sharply, the fundus being turned towards the right side and bound down, with prolapsed and tender ovary lying beneath it, also thickening of broad ligaments. Patient was put under preparatory treatment, the fundus gradually lifted up and held by cotton tampons; and after it had been made to assume a somewhat natural position, the uterine canal was dilated slowly and gradually, causing great pain. This treatment was continued until all inflammation had disappeared and the uterus was up in normal position. Finally a pessary was fitted, and on June 15th she was discharged cured. She wore the pessary for some six or eight months, when she became pregnant, and on October 13th, 1888, she gave birth to a healthy child, and has been well since.

CASE III.—Mrs. H., from Vermont, native of United States, 29 years old; married five years; first flow 15 years of age; no children; no miscarriages; husband in good health, about 30 years of age. On January 7th, 1888, the patient called at my office to be treated for uterine trouble. She said she had been treated for about two years by some doctor in Massachusetts, and had been fitted to a ring, which she wore only a short time, as it caused her extreme pain. She always thought all her troubles were caused from wearing the ring. Examination showed acute cellulitis, a tense condition of both broad ligaments, anteflexion, leucorrhea, vaginitis and vaginismus in an intense degree. I put her at first under the preparatory treatment, using small bags, made of cheese cloth, filled with slippery elm and flaxseed. These were soaked in hot water, and two or three of them packed in the vagina, being held in place by a cotton tampon soaked in glycerin.

This treatment I continued for a number of visits, when I changed the small bags and used only the ordinary cotton pads soaked with glycerin.

As soon as the cellulitis had disappeared, dilatation was resorted to, and continued during the rest of the treatment, the uterus being dilated twice a week for some six weeks. Later on I found a prolapsed ovary on the left side, of large size and very tender. I replaced this from time to time, and she improved very much. As the uterus returned gradually to its normal form and the anteflexion disappeared, she would have an increased discharge of mucus from the cervix, which would set up a new attack of vaginitis; but this gradually lessened, and

in two months it had disappeared. I then tried to have her wear a pessary, fitted her carefully to one, which she wore some four or five days; but it irritated her so, and set up so much inflammation, that I removed it. I continued the treatment some two weeks longer, and then discharged her April 7th, having nicked with my knife, in six or eight places, the remains of the hymen, as I thought this seemed to be a source of irritation, thereby causing a tendency to vaginismus. After she had been discharged she returned to Vermont. Some months afterwards I received a letter saying she was three months pregnant. In January last I received another letter, saying she had, the previous week, given birth to a splendid boy. Since then she has called on me and stated she was very much pleased at the result.

CASE IV.—Mrs. W., a native of this city, 23 years of age; married five years; never had a child or miscarriage; first flow at 13 years of age; husband about 30, strong and well. She came to the office to be treated for great pain in the back and sides, and suffered so much from dysmenorrhea that she was completely prostrated after each period.

On examination I found the uterus completely ante flexed but not fixed, also some cellulitis. I treated her with cotton tampons, but not dilatation. After inflammation had disappeared I fitted a Thomas anteversion pessary. After waiting some months and finding she did not become pregnant, I took Dr. Bullard with me to the house, put her under ether, and dilated the uterus almost up to the size of my little finger. I then put in a solid glass stem, the largest I could get; this I held in position by cotton tampons, changing them every other day for two weeks, at the end of which time I removed them, put back the old pessary, and let her sit up. Shortly after that she became pregnant, carried her child until about the sixth month, when for some reason she miscarried and I was called to deliver her of the dead fetus. In a few months from this time she became pregnant a second time, but at the third month she slipped and fell, and I delivered her of another dead fetus. A few months after this she became pregnant a third time, and with extreme care she carried the child to the full term, and I delivered her of a child on March 1st, 1888. Since then she has become pregnant a fourth time, and was delivered of another child this last March, 1889, by a physician in the upper part of the city, where she has lately moved.

CASE V.—Miss B., native of England, age 30; first flow at 19; complains of pains in back and hips, but her main trouble is the intense pain which she suffers during menstruation. (She has to work for her living.) From the first moment the flow comes on until it ceases, she suffers so intensely that most of the time she spends in bed, and is at times semi-unconscious.

She came to me to be treated December 13th, 1888. On examination I found the uterus completely anteflexed and retroverted; cellulitis and vaginitis. I put her upon the usual treatment, with the exception that I started off with an application of bismuth subnitrate and vaseline, one drachm to the ounce, to subdue the vaginitis. After this had been reduced and cellulitis removed by the constant use of glycerin pads, douches, etc., I began to dilate. This treatment I kept up twice a week, until I had completely straightened the uterus and had dilated it up to the largest size dilator. I then used the Thomas anteversion pessary, and on February 27th discharged her cured.

She has called on me once or twice since, and says she is completely cured, suffers no pain at her periods, and never has to leave her business during menstruation.

I will not weary the Society by relating any more cases in detail, but I have a few remarks to make, in connection with other cases, in regard to this treatment.

Some patients cannot stand this treatment, as it is too severe for them, often setting up a metritis or a pelvic peritonitis. Mrs. S., a lady of this city, who was very anxious for a child, could not stand the treatment, and after two or three trials was obliged to give it up, as it set up the inflammation to such a degree that she had to remain in bed and be poulticed; but I have now some six or eight patients, who come to me twice a week, whose cervixes I do not hesitate to dilate, and who are improving every day.

Mrs. McD., a patient suffering from an acquired retroflexion and fixation, had had one child; came to me to be treated. I found laceration of cervix, and both ovaries very much enlarged, prolapsed, and extremely sensitive. I followed the same plan of treatment, and within fifteen months delivered her of a child.

In a number of these cases I have tried simply the straightening-up of the uterus and applying a pessary, and in others only dilatation; but never have I had much success except by using the two methods in connection with each other. I have tried Dr. Thomas' plan of having them wear a stem and cup pessary for a long period; but though he advises it and, I understand, practises it, I always found my patients came back at the end of a few months with an attack of cervicitis or metritis followed by pain, and I have had to remove the

instruments. In following out my plan of treatment, I always tell the patient not to have any intercourse with her husband until I am through with the treatment, as it always causes more or less congestion and delays the desired result.

Hart and Barbour, page 551, state, as the spermatozoa are microscopical structures, mere stenosis of the genital canal cannot mechanically prevent their passage, thereby causing sterility. If it does not, why does sterility exist in so many cases where stenosis of the canal is found? Or why does pregnancy take place in many cases where the mechanical obstruction has been overcome by dilatation or straightening the canal?

Simple and slight version of the uterus, causing defective relations between the uterus and the male organ during coition, has been put down by some authors as a cause of sterility; but I doubt it, as I cannot see any reason for it unless the versions are quite marked, causing a change in the circulation of the uterus.

Some patients think that, because they have no orgasm during connection, they will never bear children. This is a mistaken idea; in my experience it often makes no difference whatever. I have had a number of patients tell me that they never had any sensation whatever, and consequently never expected to bear children, yet many of them have become pregnant; though I will admit that those who have the greatest sexual excitement are the ones that most often do become pregnant. To some women the act of intercourse is torture, and yet even these women have often succeeded in bearing a child. Dr. Sims, in his work on "Uterine Surgery," alludes to two cases where the patient had to be etherized before she succeeded in having intercourse, which resulted in conception.

In conclusion I would lay down these few rules for the treatment of sterility:

- 1st. Be careful in selecting your cases for operation.
- 2d. Subdue all inflammation as far as possible before attempting dilatation.
- 3d. When you dilate, do it slowly at first, using only the smaller sized dilators to start with. But at the end do not be satisfied with only a partial dilatation; open the canal to the

fullest extent that is safe, thereby giving free drainage to all débris of tissues that may have resulted from the dilatation.

4th. Use a pessary for some months following the dilatation.

5th. Order your patient to have *no* connection with her husband until *after* her first menstrual flow following her discharge from treatment.

6th. When you are through with the treatment, *discharge her*, and do not make any more examinations with the sound.

7th. On discharging the patient, tell her she may have to wait a few months until the mucous membrane of the uterus has recovered from the injuries received from the dilators, and is restored to its normal condition, before pregnancy is liable to occur.

8th. When practicable advise your patient to remove to the country, or travel for a few months where she will receive a complete change.

102 WEST 54TH STREET.

AXIS TRACTION.

BY

J. ELLIOTT LANGSTAFF, M.D., L.R.C.P. Edin.,

Brooklyn, N. Y.

(With one woodcut.)

THE great diversity of opinion concerning the value of the forceps indicates a want of proper application of the principle of instrumental assistance to nature's efforts in expelling the fetus.

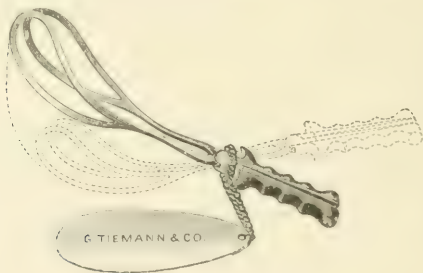
When we come to compare the axes of the pelvis with the direction of traction employed, we certainly find something very defective.

According to the conformation of the pelvis, in the first and second positions the head takes the following direction (the patient being on the back): downward and backward until the occiput comes below the arch of the pubes, there being

flexion during this descent; then upward and forward, extension taking place *after* the occiput is delivered.

The direction of traction with the majority of instruments is first downward and forward until the perineum begins to distend, which is before the occiput is relieved from the arch of the pubes. The handles are then carried gradually forward and upward, causing extension of the head before the occiput is delivered; in other words, the head passes through the ostium vaginae in the occipito-frontal instead of the cervicobregmatic diameter, endangering the perineum by this increase of measurement of the head.

To draw downward and forward with a head above the brim is certain to bring great pressure on the pubes. The com-



bined power of three men has on more than one occasion been brought to bear in this direction. Slipping of the forceps and separation of the symphysis pubis are not of rare occurrence.

The Tarnier forceps has changed the direction to directly downward, and thereby lessened the danger in high delivery; but traction is required backward and downward in the direction of the "birth canal" to keep the head well flexed until the occiput passes beneath the arch of the pubes.

The amount of force required to expel the head after the occiput is delivered is very little, and does not require assistance, the direction upward being caused by the absence of resistance in that direction, and the pressure from below of the coccyx with its attached muscles.

In order to assist labor in this, the natural direction, I have

devised the following attachment to the forceps, which is shown in the accompanying illustration.

It is an oval brass plate having a chain attached to one end. After the forceps has been introduced, the loop of chain is slipped over the handles and the plate passed beneath the sacrum. A piece of soft muslin is passed between the chain and shank of the forceps to protect the vulva. By simply raising the handles, the blades are brought downward and backward, keeping the forehead pressed into the hollow of the sacrum, while the uterus presses the occiput forward beneath the arch of the pubes. The forceps is then removed, and labor is completed by uterine contraction alone.

I had an opportunity of illustrating this improvement to a couple of medical men a few weeks ago in a case of eclampsia. The patient was unconscious and there were no uterine contractions. After making two strenuous endeavors to bring down the head, without effect, I applied the plate and chain, when the head descended without the slightest difficulty.

As the weight of the pelvis holds the fulcrum in position, no assistance is required, and no other position of the patient necessary other than that needed for applying the forceps.

I do not hesitate in saying that not more than one-quarter the amount of power is used in delivery by this appliance.

I would also add my belief in the cause of laceration of the perineum in natural labor to be insufficient development of the muscles attached to the coccyx, which allows extension to take place before the occiput is delivered. The attempt to save a perineum by pressure is of no avail after extension has taken place, because the direction of pressure by the uterus through the cervical vertebræ has changed, from being against the occiput, to the frontal bone and the perineum with its manual support, so that one force is exerted against the other.

The application of cloths wrung out of hot water merely increases the elasticity of the part; its value should not be attributed to perineal support.

IN MEMORIAM.

ISAAC E. TAYLOR, M.D.

(With Plate.)

ISAAC E. TAYLOR was born in Philadelphia, April 25th, 1812. He graduated from Rutgers College in 1830. During his college career he was suspended for playing billiards. This interval in his college studies he spent in attending lectures on midwifery, anatomy, and chemistry. The taste he then acquired for medical science never forsook him ; for we find that after graduation, and two years' study in the law office of Samuel L. Southard, Esq., of Trenton, N. J., he returned to medicine, and graduated M.D. from the University of Pennsylvania in 1834. From 1835 to 1839 he engaged in mercantile pursuits, being associated with his father-in-law, Stuart Mollan, Esq., of New York. In 1840 he visited Paris, where he studied obstetrics and the diseases of women and children with Prof. Cazeaux. From this time onward there was no faltering in his career. His future life was devoted to the practice of the profession which he dearly loved, and of which he became so distinguished an ornament.

In the early part of his professional life he devoted much time to the acquisition of the then new arts of percussion and auscultation, and was always, as a practitioner, expert in the methods of physical diagnosis. It is well to remember that Dr. Taylor was singularly well versed in general medicine. It was to this fact, perhaps more than to any other, he owed his strength in the fields of gynecology and obstetrics, with which his reputation was mainly associated.

After his return to New York in 1841, he conducted for seven years the classes in diseases of women in the City, Eastern, Northern, and Demilt Dispensaries. In 1851 he was elected physician to the Bellevue Hospital, and became one of the body of famous men who contributed to make that charity renowned in the annals of American medicine.

Dr. Taylor's literary contributions have been numerous and possess eminent intrinsic merit.



Isaac E. Taylor

He will be remembered chiefly for his demonstration of the non-shortening of the cervix during pregnancy. He not only strengthened the arguments already advanced by Weitbrecht, Stoltz, and Duncan as to the closure of the os internum up to the last two weeks preceding delivery, but in 1862, in an article published in the *American Medical Journal*, he proved, by four post-mortem examinations made upon women dying from accidental causes during the first stage of labor, that the cervix in reality retained its entire length up to the beginning of labor. In this paper he anticipated the work of Müller, to whom the credit is generally given. At the time of their publication his views were treated by his contemporaries with derision, but events have since proven the correctness of his observations and the clearness of his scientific vision.

As a gynecologist Dr. Taylor cannot be said to have taken an active part in furthering the new methods inaugurated by Sims and perfected by Emmet and Thomas.

As an obstetrician he was *facile princeps*. I can never forget how, at the time of my first connection with Bellevue Hospital, Dr. Taylor, with complete sacrifice of his personal comfort, answered every summons made by me for assistance in difficult cases. With gratitude it is my pleasure to here record my deep sense of personal obligation for the innumerable lessons he taught me in those days regarding the difficult work of the obstetric art. He was great as an operator at a time when obstetrics was not as yet overshadowed by the growing department of gynecology.

The esteem and respect in which Dr. Taylor was held by the profession in this city was evidenced by the many positions of honor conferred upon him.

Though never a seeker of office, he was chosen at various times President of the New York County Society, of the New York State Medical Association, and of the Journal Association; President of the Obstetric Section of the Academy of Medicine; President of the Bellevue Hospital Medical College; President of the Medical Boards of Bellevue and of Charity Hospitals, and of the Consulting Board of Medical and Surgical Relief attached to the Bellevue Hospital. He was likewise consulting physician to many other charitable institutions of the city. When he left for Europe in 1872, a public dinner

was given him by the physicians of New York. Thus when he retired a few years since from the active practice of his profession, he had had bestowed upon him nearly every honor in the gift of loving and admiring friends; and all were his friends who had the pleasure of knowing him.

The record of this good man's career would not be complete without mention of his large-hearted charity; only those who were intimate with him can form any idea of the deeds of kindness and the helpful acts towards others which marked his daily life. He lived and died a pure-hearted, high-toned gentleman, an example to be emulated by those who follow him.

WM. T. Lusk.

CORRESPONDENCE.

TO THE EDITOR OF THE JOURNAL OF OBSTETRICS.

ON THE NON-RETENTION OF URINE IN YOUNG GIRLS AND IN WOMEN.

MAY I be permitted to make a few remarks on a paper by Dr. H. Marion-Sims on the above subject published in your last September number, read by him at the March meeting of the Obstetrical Society of New York, in which he recommends mechanical distention of the bladder in cases of incontinence of urine other than those produced by cystitis or growths in the bladder? In the paper mentioned, he remarks that at the time he treated the case related he was certain that he had struck an original idea. "In looking up the literature of the subject," he says, "I find very little mentioned in regard to such cases, and only one case could I find reported where incontinence was cured by forcible dilatation. This case was in a girl, after puberty, whom Braxton Hicks had cured by forcible dilatation with warm water, but in what quantities I could not find out." Afterwards Dr. Sims says: "I only give the above references just to show that there is no mention made of contraction and hypertrophy and its treatment by forcible dilatation, except in the one case given by Braxton Hicks."

I do not know from what imperfect source Dr. Marion-Sims derived his report of the case he alludes to, but had he written to me I should have been happy to answer him and to point out that if he referred to the second volume of the *Lancet*, 1868, page 7, he would find that I had done much more. Under the head of "Two Cases of Incontinence of Urine from Earliest Childhood cured by Mechanical Dilatation," the report begins: "A cause of incontinence of urine is indicated in the following cases which is not generally recognized. The treatment which Dr. Hicks applied was very successful, and we have no doubt that the record of it will be of great service to practitioners who have patients suffering from this very troublesome condition." Then follows the first case and treatment, assisted by injections of morphia and other remedies; and then: "Dr. Hicks remarked that the constant evacuation of urine permitted by some mothers to their children allowed the bladder to become so constantly empty that after a time the muscular power of the sphincter was not sufficient to counteract the contractility of the organ. In recent cases, no doubt, this could be voluntarily overcome by adults; but in old-standing cases, although we might do much by lessening the sensibility of the bladder, *yet we might proceed at once to overcome its resistance by mechanical force*, so that further treatment would not be required." This is well instanced by Case II., after which follows also: "Both these girls had been unfit for service from their complaint. Dr. Hicks suggested the applicability of this treatment to both sexes in cases with similar history. He thought it was possible that in some cases there were congenitally small bladders, and these possibly might be more difficult to manage." Then follows a case of contraction following cystitis, in which relief to a certain extent was obtained by dilatation, in addition to other local means, but not so satisfactorily as in the above cases.

It is a source of satisfaction to me to find that Dr. Sims confirms my ideas and treatment by his own independent observations, and I feel sure he will, on the perusal of these remarks, award me the claim I am making of priority, as it is twenty years since my cases were published. And I think I may make another claim of priority respecting the washing-out of the bladder by various medications, for I believe that prior to

my lectures on "Some Diseases of the Urethra and Bladder" (in the year previous to the report of the above-mentioned cases), *Lancet*, vol. ii., 1867, the washing-out and locally treating diseases of the bladder was not done; now it is the rule of practice, though, of course, with additions to the medicaments employed, such as boric and salicylic acid, etc.

I have also since tried distention in other cases of contraction, caused in older patients temporarily by other circumstances than cystitis and tumors, with great benefit; and have also pointed out, some years back, that in distention and washing-out of the bladder it is not necessary that the bladder should be entered, if we use an open-ended canula, passed up to but not through the sphincter, using a little more pressure on the piston. But I have also shown that generally sufficient pressure for most cases can be obtained by a rubber tube and funnel attached to the canula, the water pressure being regulated by the elevation of the funnel.

J. BRAXTON HICKS, M.D., Lond. F.R.S., etc.

NOVEMBER, 1889.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF NEW YORK.

Stated Meeting, April 16th, 1889.

The President, DR. H. T. HANKS, in the Chair.

HYDRO- AND PYO-SALPINX.

DR. A. P. DUDLEY presented specimens with the following histories:

The first case is similar to that related at the last meeting, with the exception of there not having been an opening into the rectum. And I would say that the patient whose history I related at the last meeting is now convalescent and walking about the ward. At no time during convalescence did the temperature rise above 99.5° F.; and there has been no evidence of trouble from the fistulous tract or abscess cavity. The only condition now present is a feeling as if there were a prolapsed ovary, a little round solid mass in the cul-de-sac.

The second case presents the following history: Mrs. M., age 24; married eight years ago; widow four years; no children. One miscarriage at five months in first year of married life. Matured at twelve, function normal till after miscarriage. She was sick for three months after the latter, and

since has had menorrhagia, flowing every two weeks, flow lasting eight days, then followed by profuse leucorrhea. Walking was painful; pain in left side. She was treated for some time in the Long Island College Hospital for menorrhagia; uterus curetted and ergot given—no real benefit derived from either. Diagnosis there, fibroid tumors of the uterus, and ovaries advised to be removed. Entered Post-Graduate Hospital yesterday. Thorough examination revealed an enlargement in left side of pelvis, apparently in broad ligament. No enlargement of consequence felt in right side. No fibroids could be discovered upon the uterus. Laparotomy made to-day. On the right side large hydro-salpinx, and on left side pyo-salpinx was found. The latter burst in my effort to remove it, and pus escaped into the pelvis.

I did not use sponges at all, but washed out the pelvis with water too hot for the hand to bear, probably of a temperature of 120° F. I then caught up and ligated the pedicle, and stitched a rent which I had made in the broad ligament while in haste to free the cavity of pus. After again thoroughly cleansing the cavity with hot water, the abdomen was closed, no drainage being employed. This is the fifth case since October last in which, during the removal of a large pyo-salpinx, I have found the adhesions so extensive as to lead to rupture of the sac in their separation. In no one of the five was a drainage tube employed. In four there was no interruption to recovery; the fifth was operated upon to-day, too recently to speak of the final result. I think that if a drainage tube had been used there would have been greater risk than without it. It probably could have been dispensed with in many cases which have recovered with its use. One cannot say, when a patient gets well with it, that she would not have gotten well without it.

Replying to a question from the President, DR. DUDLEY said he did use sponges after thoroughly washing the abdominal cavity, but not to wipe off the pus which had escaped during the operation.

DR. TALBOT asked whether there was not danger, in using water, as Dr. Dudley had done, instead of sponging, of carrying the pus back among the intestines.

DR. DUDLEY.—I have found that the coils of intestine, as they come up against the abdominal incision, are almost proof against the entrance of water into the abdominal cavity, and in washing off the pus I did not make any pressure upon the intestines, but merely let the water run over the surface of those which were exposed. If sponges had been used, they might have carried the pus into tissues where it would have become lodged.

The President having stated that he presumed Dr. Dudley would have preferred to carry the water into Douglas' pouch, if he could have done so, instead of pouring it on the surface, Dr. Dudley replied in the affirmative.

DR. J. HENRY FRUITNIGHT said that, in view of the discussion which had taken place between Dr. Jacobus and Dr. Weir at a recent meeting of the Northwestern Medical and Surgical Society, regarding the effect of hot water in the abdomen in shock, he would ask Dr. Dudley whether he had found patients tolerate it well or not.

DR. DUDLEY.—I have found that patients bear the use of hot water in the abdomen exceedingly well. I have repeatedly used it where there was a flagging pulse and the patient was looking bad, although there was no other indication for it than to counteract shock, and it has proven the best means of raising the pulse. When it is employed, patients come from under the influence of ether with much less shock. The patient operated upon to-day was under ether two hours, but when put to bed the pulse was good, and she is now in good condition. I think that with the use of hot water

we save many patients who without it would succumb to prostration or peritonitis.

DR. E. H. GRANDIN.—There is no question about hot water bringing patients out of shock in obstetric practice. For instance, in post-partum hemorrhage I have many times noticed the hot uterine douche, or even the hot vaginal douche, revive the patient from shock. Hot water applied to the cardiac region, in syncope occurring during the administration of chloroform, will rally the patient more quickly than anything else. I recall an instance which occurred three years ago at the Maternity Hospital. The junior house physician was more interested in seeing me perform version than in administering the anesthetic—chloroform—when suddenly I noticed that the patient was pulseless. Hot water was called for immediately, applied to the cardiac region, proved hot enough to blister the entire surface, but the patient rallied in a few moments.

HYDATIFORM DEGENERATION OF THE PLACENTA.

DR. FRUITNIGHT.—The patient from whom this specimen was obtained is aged 25. She had been confined with her first child about three years ago, by a well-known physician of this city. From her description of the labor, it was difficult and instruments were used. She was sick a long time afterward. Finally she recovered fairly good health. Five or six months ago she consulted the late Dr. Ranney, who came to the conclusion that she was pregnant. After his death she consulted no one until about three weeks ago, when she sent for me. She was in doubt whether she was really pregnant. I examined her and coincided in the opinion which Dr. Ranney had expressed, that the case was one of pregnancy; but the patient discredited it, since she was very large for the fifth month and had not yet felt life. Last night I was called suddenly on account of profuse hemorrhage. She had been out in the afternoon and was seized with hemorrhage on the street. I found everything saturated with blood. The external os was gaping a little; a soft body was projecting, but not far enough for me to extract it. I put in a tampon, left it in over night, and this morning found the os sufficiently dilated to admit the hand. A soft, boggy body was felt, which proved to be the placenta, which had undergone hydatiform degeneration.

These cases are not very common. I believe the theory of their formation is that a degeneration, resulting in a dropsical condition of the chorionic villi, occurs. The usual small, cyst-like bodies, coalescing and containing a colorless, serous-like fluid, are to be observed.

As to diagnosis, it is very difficult to make. The only thing which would have led me to suppose this condition was present was the unusual size of the uterine body for the presumed period of pregnancy. I believe very few cases have been diagnosticated before delivery, which usually takes place before the sixth month.

After removal of the mass, the uterus should be curetted to free it of any remaining shreds. About thirteen years ago I had a similar case, but the mass was about four times as large as this. The patient was more exsanguinated after the expulsion, and had to be kept under the influence of brandy six or seven hours until she revived. Recently, during my absence, Dr. Chas. E. Young, my associate, took charge of another case in my practice, which he will relate.

DR. YOUNG (*present by invitation*).—The case was that of a woman

who had borne five children and had four miscarriages. She had a miscarriage March 20th, 1888. In September following she menstruated a week after the usual time, and until December had only slight show, without pain. Through January, 1889, she continued to have a bloody discharge and passed at times shreddy material. Up to the middle of the month one napkin daily appeared to suffice, but two were necessary from that time onward. January 31st a clot of blood passed. At 3 A.M., February 3d, large clots began to appear, with severe hemorrhage. A few hours later the greater part of the hydatid mass escaped. It frightened the midwife and she sent for Dr. Fruitnight. In his absence, I called and found the patient bleeding profusely, and faint. The expelled mass would fill the crown of a hat, and had the characteristics described in the books as pertaining to a hydatiform placenta. The cysts were more distinct than in the specimen presented by Dr. Fruitnight. The womb had contracted considerably, and I was obliged to use the curette to scrape its walls. Quite a quantity of detritus was brought away in this manner, and the hemorrhage ceased. I washed out the uterus with a carbolyzed solution. The patient made an uninterrupted recovery. Not having been present in time, I was unable to appreciate the enlargement of the uterus, which doubtless was much beyond the average size in pregnancy at that period. There was no history of syphilis. In this case the question arose whether frequent child-bearing was not perhaps a factor in the etiology.

PREGNANCY COMPLICATED BY A DERMOID CYST OF THE OVARY IMPACTED
IN THE PELVIS; LAPARATOMY.

DR. R. A. MURRAY.—These specimens consist of the ovaries and a cyst which I have not yet opened, and which is either a fibro-cyst or a dermoid.

Mrs. S. L., age 29, married about two years, came to my office last December to make an engagement with me to attend her in confinement. I requested her to return to my office within a week for examination with regard to the size of the pelvis, etc. I found a large mass on the right side, dipping down behind the uterus, encroaching greatly on the pelvis, so that the cervix was pressed over to the left and fixed. The mass was indistinct, was firm, could be felt by the rectum, and on bimanual palpation was found to be in the ovarian region on the right side. It was absolutely immovable; not fluctuating, but distinctly boggy to the touch. The uterus was of the proper size for pregnancy at six months and a half. On my advice the woman was seen by Dr. Janvrin and Dr. Gillette. The question arose, What should be done? I thought the tumor was a fibro cyst, on account of very slight fluctuation which could be felt high up per rectum. But the fluctuation was not well defined because of pressure of the enlarged uterus on the tumor. Dr. Janvrin and Dr. Gillette coincided in the diagnosis, and suggested that the proper treatment was to empty the uterus, then see what the nature of the mass was, and, if necessary, remove it. I explained to the family that there were but three courses to choose between: first, to let pregnancy proceed and do Cesarean section; second, to take the tumor out at once; or, third, to bring on miscarriage and, if necessary, remove the tumor afterward. On the advice of a former physician of the family, a homeopath, they insisted on allowing pregnancy to proceed to the seventh month, with the hope that the child might be viable. On the 13th of January I intro-

duced a sponge tent to bring on miscarriage, followed it by one of Barnes' dilators, used a hot douche, and ruptured the membranes with a catheter introduced high into the canal and left there. Although these measures were carried out faithfully throughout the day, the cervix remained as narrow as at first. Another night was passed, and the next morning the patient's condition was such that I felt it necessary to empty the uterus, and, with the assistance of Dr. Grandin and Dr. Coe, chloroform was administered and the child turned. Having effected version, I endeavored to extract with the forceps, but found that to be impossible. I then did craniotomy and completed delivery. The patient got along well, but did not recover her strength for fully a month. The pelvis being very small, the perineum was slightly lacerated. The rent was sewed, but did not at once heal, probably because of interference with the circulation from pressure of the tumor on the vessels. By pressure the tumor caused constant irritation in the rectum and interfered with defecation, so that it was necessary to use enemata. These gave only partial relief from suffering. I therefore determined to remove the tumor, and was assisted by Drs. Janvrin, Gillette, Grandin, and Coe. The patient, having a slight goitre, had taken chloroform very badly at the miscarriage, and I determined at this operation to use ether. She took the ether quite satisfactorily. After its administration the tumor could be easily mapped out, and my former diagnosis was confirmed. An incision about four inches long was made, the tumor readily drawn out, and found to have a short, narrow pedicle, which was ligated and the tumor removed. Scarcely a teaspoonful of blood was lost. The other ovary was found to be cystic, the tube enlarged; and although it seemed reasonable to suppose that the pregnancy had been through this ovary, it was decided to sacrifice it rather than submit the patient to the hazard of another operation. The temperature has at no time been higher than 100.5° F. A small abscess developed at the lower angle of the abdominal wound, otherwise no unfavorable symptoms arose.

I think the growth of the tumor removed dated back a year and a half to two years. Some of the questions worthy of consideration in this case seem to me to be: First, choice of operation; second, of removing the other ovary; third, the necessity for examining every woman one is engaged to confine, before the date of accouchement arrives, in order to be ready beforehand to meet any obstacles.

Replying to the President's question, DR. MURRAY said the tumor was ovarian; that the woman had last menstruated the 17th of June, and was due the 23d of March. He operated a week ago Thursday, or two months from the date of the craniotomy. He asked the members if they thought it was advisable in such a case to wait until the child should become viable before operating.

THE PRESIDENT remarked that unless the tumor were absolutely fixed, as Dr. Murray had said it was, it should have been pushed up out of the pelvic cavity with the advance of pregnancy.

DR. MURRAY said that while the tumor was quite immovable before the miscarriage, yet at the operation there was not much inflammatory adhesion, and it was readily lifted. It would be remembered that pregnancy had advanced to the seventh month and that the pelvis was very small.

DR. GRANDIN remarked that the gravid uterus filled the pelvic brim, and that the tumor with its short pedicle lay below it, thus becoming incarcerated in the uniformly contracted pelvic cavity. He believed that in this

case there were no adhesions to hold the tumor down, as was shown at the operation. The tumor could not rise and could not be pushed up because of incarceration in a contracted pelvis.

THE PRESIDENT remarked that in many cases similar to this the tumor had been pushed out of the pelvic cavity while the woman assumed the knee-chest position. He had had one such case six years ago, and another since, in which the tumor was larger than that presented. He was disposed to think there must have been adhesive inflammations interfering in Dr. Murray's case.

DR. KIRCH (*present by invitation*) said that in some cases similar to that of Dr. Murray the pelvic tumor appeared to be solid when in reality it contained fluid, and asked whether pregnancy might not have been allowed to proceed to a certain period, say the eighth month, then the tumor punctured through the vaginal fornix, allowing its contents to escape, after which delivery could be effected much more easily.

DR. GRANDIN stated that at present it was the rule, in aspirating a supposed cystic tumor of the pelvis, to be prepared to open the abdomen. The procedure was likely to be followed by peritonitis, and in the case reported laparotomy would have been preferable to aspiration.

DR. H. J. BOLDT.—It seems to me that among the questions which naturally suggest themselves in this case are, first, whether it would be justifiable to operate before delivering the child in like cases; second, whether it would be proper to keep watch of the case until term, and then do Cesarean section and at the same time remove the tumor. I think that operations for different kinds of ovarian tumors have been done sufficiently often during the course of pregnancy to show that they may be undertaken with comparative security against interference with gestation. While the dangers of Cesarean section have been much diminished the past few years, yet it seems to me they are greater than those attending an operation for removal of the tumor and allowing pregnancy afterward to go on to term. With care one can obtain sufficiently firm union of the abdominal wound to prevent occurrence of hernia during delivery. By such a course both mother and child might be saved.

THE PRESIDENT.—With the tumor below the uterus and bound by adhesions, the uterus of the fifth or sixth month of pregnancy, would Dr. Boldt expect to be able to get the tumor out?

DR. BOLDT.—It is a question whether the adhesions were not only apparent. I am inclined to think that the tumor was only impacted, and not adherent.

THE PRESIDENT.—Even in that case it would have been very difficult to pull the tumor up, since it could not be pushed up from below.

DR. BOLDT.—Yet, having the abdomen open, it would have been much easier to push the uterus to one side and get at the tumor to enucleate it.

DR. MALCOLM McLEAN.—Regarding the justifiability of removing the other ovary in this case, I should say that if it only appeared to the eye cystic its removal was at least unnecessary and, from my standpoint, inadvisable, for we do not know that all ovaries which merely have cysts upon them are not capable of the function of a healthy ovary. In fact, we have pretty good evidence that an ovary which has the appearance of cysts upon its surface does continue to perform the function of ovulation, and that fecundation may follow. In this particular case, the woman was especially desirous of raising a child, and any possible opportunity should have been left for future maternity. I have made these remarks, however, without having inspected the ovary removed.

DR. GRANDIN.—This ovary has been submitted to examination by the pathologist, Dr. Coc, and he has expressed the opinion that its condition eminently justified its removal. Except with regard to this particular case, I think Dr. McLean's remarks were well taken, even though statistical data seem to prove that when one ovary has degenerated the other is likely to follow the same course.

DR. MURRAY.—With regard to the question of puncturing such a cyst, there was sufficient firmness about this one to assure us that it contained

considerable solid matter, and I certainly do not think it is good practice to puncture unless we feel pretty positive that the fluid contained is absolutely bland. If in puncturing a few drops of pus should escape, we would excite a peritonitis.

With regard to removing the tumor and allowing pregnancy to continue to term, it would at least have been very difficult. If the uterus could not be got to one side or raised when the patient was in the knee-chest position, it is not likely the tumor could have been reached after opening the abdomen. Besides, a positive diagnosis before the operation was not possible, and had the tumor proved to be a fibroid of the uterus the operation could not have proceeded. If it had been taken out, there would have been, according to my experience, hemorrhage into the uterus, which of course would have led to miscarriage.

The other ovary was cystic, its tube contained pus, and to have left it would have been to expose the patient to the hazard of another operation. Such was the opinion of all present.

I have just opened the tumor, and, as you see, it contains hair and bone, showing it to be a dermoid cyst. Had it been punctured, laparotomy would certainly have been necessary to save the patient's life.

DR. TALBOT then read a paper entitled

STERILITY AND DYSMENORRHEA CAUSED BY FLEXIONS, AND THEIR TREATMENT.¹

DR. H. MARION SIMS.—I am very glad to have heard this very interesting paper. The subject is to me of more than passing interest, since for years I have given more attention, perhaps, to these disorders of women than to any other. Of course, in the treatment of sterility and dysmenorrhea it is necessary to see that the menstrual flow escapes from the body of the uterus; and it is equally necessary, in order to overcome sterility, that the male secretion be able to reach the cavity of the womb. As Dr. Talbot has said, when the dysmenorrhea and the sterility are due to flexion it is necessary to dilate the cervix and enlarge the canal. In the treatment of such cases I much prefer rapid dilatation to slow dilatation. I practised slow dilatation some years ago, but gave it up for rapid dilatation with incision. I always etherize the patient, have her stay in bed, it may be, five or seven days, the object being to lessen the dangers of inflammation. In very acute ante-flexion, I always make an antero-posterior incision and follow by thorough dilatation, then introduce a stem supported by a tampon. Treatment of this class of cases is always followed by a self-retaining stem pessary, which the patient wears when up and about. It not only serves the purpose of keeping the canal straight, but also lifts the fundus of the uterus off the bladder, thus obviating the necessity for a vaginal pessary. I have not used a vaginal pessary in such cases for years. There is one thing to which I attach much importance in the after-treatment—to examine the uterine secretions from time to time with the microscope. In this way I learn whether the uterine secretions are healthy, and whether the spermatozoa after connection are viable. If we take for examination some of the secretion from the os awhile after intercourse, another specimen perhaps from the canal, and a third from the vagina itself, we can readily determine whether the secretions are normal, and, if not, we may by treatment render them so and thus make pregnancy likely. I attach as much if not more importance to treatment of the secretions than to the operation itself.

Where the ante-flexion is not so great, the os, instead of being in the axis of the vaginal outlet, pointing toward the posterior vaginal wall, I always make bilateral incision. I have tried other methods from time to time, but have always come back to bilateral incision, followed by the same after-treatment just spoken of. In my experience, the long, elongated cervix with a pinhole opening is attended by sterility, and its treatment should be followed by the stem, the object of which is twofold—first, to maintain the opening which you have established with the patient under ether, and, sec-

¹ See original article, page 37.

ond, to establish drainage from the uterine canal. Drainage takes place alongside the stem very freely, and in a short time the enlarged uterus contracts to normal size, and the patient feels braced up equally as much as if she wore a vaginal pessary.

What the author has said with regard to the fault sometimes lying with the husband is very true. That fact is to be determined by microscopical examination of the semen. But if leading questions be asked, as the paper suggests, nineteen times out of twenty the husband will become indignant at the idea that he cannot procreate. The only way to determine this point is to use the microscope—and it is necessary to tell the wife as well as the husband what is wanted—and examine the secretions from the os and from the vagina. If spermatozoa be found in the latter, and not in the former, we know that the husband has spermatozoa but that the uterus does not receive them. If no spermatozoa be found in the secretions at the first examination, a second or a third will be necessary before condemning the husband.

It has been claimed that dilatation is liable to be attended by hemorrhage, but I have practised it since 1874 and have not yet had any trouble from that source. The stem will control any tendency to hemorrhage, and the cotton tampon will have a like effect. Then keep the patient recumbent and there will be no danger. There may be cases in which it would be inexpedient to operate; they are those in which there has been pelvic inflammation, leading to adhesions of the ovaries or uterus. But, all things considered, I think rapid dilatation is preferable to slow dilatation. At least I have had remarkably good success with it. At one time, I think in 1879, when in San Francisco, I wrote a paper on this subject which was published in the *Pacific Medical Journal*. In it I gave the histories of some fifteen successful cases out of twenty-four operated upon. Such a statement may seem hard to believe, but it is true.

Dr. Talbot having asked how long he left the stem in after the operation, Dr. Sims replied that he put a triangular-shaped stem in after the operation, and left it four, five, or six days, according as the patient could bear it, preceding its removal by taking out a little of the cotton tampon each day until all was extracted. Three or four days after removal of the first stem, the one he now showed was inserted. By its use the secretions will gradually right themselves. If not, then take the stem out, treat the uterine canal a few days, and reinsert the stem. The patient may be discharged within from one to three months.

Dr. CLEMENT CLEVELAND.—I understand that Dr. Outerbridge, who has invented an instrument for keeping the cervical canal patent, is present, and I think the members will be glad to hear from him.

Dr. OUTERBRIDGE (*present by invitation*).—Having recognized the importance of this subject, I have invented an instrument which I think will accomplish a double purpose: first, make pregnancy possible, and, second, thereby cause the anteфлекed uterus to resume its normal position. It consists of a continuous bent steel wire, somewhat flexible or distensible, and is introduced with ease by another instrument made for that purpose. It is introduced six or eight days before the menstrual period, and is worn during the flow. Thus it differs from other instruments in that it permits of perfectly free exit of secretions from the uterus, and does away with all danger of wearing it during the flow. If dysmenorrhea has existed, it relieves it. It is taken out after the menstrual period. I have used the instrument only four months and a half, and have already had six or eight cases in which it has led to pregnancy, which usually takes place before the menstrual period. I have employed it in any and all cases of dysmenorrhea and sterility, in over one hundred cases, and have thus far seen no evil results.

Dr. BOLDT.—About all has been said on this subject which need be said. Dr. Sims, however, made the remark that the enlarged uterus will contract and become smaller after introduction of the stem. I have found, on the contrary, that the uterus enlarges after the stem is introduced. What is required in these cases is to keep the cervical canal patent, and I think that of the two modes of dilatation the rapid one is preferable.

DR. SIMS —I only said that in some cases, in which there has been metritis and enlargement of the uterus, the introduction of the stem will establish free drainage and lead to diminution in the size of the uterus; not in all cases, however, by any means.

DR. A. H. GOELET.—I have written so much on this subject that it is hardly necessary for me to express my views on this occasion. I always do dilatation, but not rapid. With due respect to Dr. Sims and his illustrious father, I think I have shown that it is not necessary to incise the cervical canal. My rule now is to dilate only in congenital flexions, not in the acquired forms where there is dysmenorrhea with hypertrophy of the canal. In the last-named cases I employ galvanism to the canal instead of dilatation. Some years ago I tried dilatation in a case with the hope of making pregnancy possible, but without success. Five or six years afterward the woman came into my office in great mental distress, complaining pitifully that she could not have a child. She insisted on having something done, and I passed an electrode into the cervical canal and used a current of about thirty milliamperes. She went away, and not long afterward returned and was then two months pregnant. Whether the current had checked an imperceptible secretion, or overcome partial occlusion from hypertrophy of the mucous membrane, or acted in some other way, I am unable to say.

With regard to the intra-uterine stem, I think it is perfectly safe to use it, if the patient is kept in bed and drainage is established. The stem which I use is perforated in the centre, that the drainage may be more perfect, although some drainage will take place around the stem, as Dr. Sims has said. The stem should be long enough to go beyond the flexion, and with a large opening it affords better drainage than without. As to the patient wearing it while going about, I do not think too much can be said in condemnation of the practice. I have now a patient under treatment who has salpingitis and ovaritis, the result of going about with a stem introduced by a distinguished specialist in this city. It is very easy to cure ordinary flexion by galvanism applied to the canal. It is seldom necessary to use a vaginal pessary. Galvanism alters the circulation, establishes drainage, overcomes obstruction in the canal. I have had more satisfaction with it than with any other form of treatment. It causes less irritation, the patient gets along better under its use, and one has no occasion to be afraid when she leaves his office, if not more than fifty milliamperes have been used.

DR. VON RAMDOHR.—About ten years ago, the first time I attended a meeting of this Society by invitation, Dr. Noeggerath spoke on this subject, and said that he did not dilate unless free drainage was wanting. At that time it was customary to dilate with a view to let the spermatozoa in. At present I think we dilate more for the purpose of letting the secretions out, and when the endometrium is in a condition to receive the spermatozoa they will take care of themselves. The preliminary treatment is, of course, of much importance, especially if the ovaries are not in a condition to secrete the ova, or if the Fallopian tubes are matted together, for in that condition sterility is a necessity. After overcoming these conditions, when they exist, the endometrium must be cared for. If galvanism, or dilatation, or other means will cure sterility, why do we have so many sterile women?

DR. A. P. DUDLEY remarked, concerning the instrument presented by Dr. Outerbridge, that he thought it would, after a few days, cut into the tissues of the canal and the os would close over it. In fact, that had been the result in a few cases in which he had employed it.

DR. TALBOT.—Dr. Goelet said that in all cases where flexion had existed there was liability of its returning, yet he never allowed his patient to wear a pessary. The only remark I have to make is that, in my experience, when the patient wears a pessary after dilatation, flexion does not return, but without support I cannot conceive why flexure should not return in the course of time.

TWO CASES OF EXTRA-UTERINE PREGNANCY.

DR. MALCOLM McLEAN.—I had intended to bring full notes of three cases of extra-uterine pregnancy, but, having forgotten them, I will relate two of the cases which are plainly in mind, and which may be of interest as representing two classes.

The first case is that of Mrs. H., age 30, married four years, who had borne one child. I was called to her the middle of October, 1887, by her family physician, who had discovered her in a state of shock from some accident. On my arrival I found an Irishwoman, with a temperature of 101.5° F., pulse 130, symptoms of pelvic inflammation, with a history of having been pregnant three months, occasional loss of blood the last two months. About ten days before I saw her, on arriving at her house after visiting a store, she was taken with a repetition of the pain which she had occasionally had in the left groin. By the time she had reached the head of the stairs she cried out in agony and fell to the floor in a state of syncope. When the doctor arrived she was still in great pain, which she located above Poupart's ligament on the left side. When I was called, six or ten days later, I found the uterus pushed forward and to the right, and was able through the thin abdominal walls to distinctly map out a tumor along the posterior and upper part of the pelvis on the left side, not dipping down toward the vagina. It could be taken hold of easily and moved, and what seemed like a fetal form could be mapped out. Around the tumor was a semi-fluctuating mass which I took to be effused blood. The solid mass was very distinct from the softer and surrounding mass. The uterus could be clearly marked out, yet it seemed to be one with the tumor.

The woman had missed her periods in July and August, and immediately after the expected period in August a gush of blood took place, which was repeated within seven or eight days, attended by pain. Thus she went along through August and September, when the attack just described took place. A diagnosis of extra-uterine pregnancy with rupture was made by myself and others who saw the woman; laparotomy was suggested, but refused positively by the patient and her husband. She was taken to a hospital, where the same diagnosis was made and an operation proposed, but she lay in bed two weeks, refusing to be operated upon, and then demanded her discharge. She left the hospital, and with some difficulty I got on her track again, and found her able to walk about, the tumor decreasing somewhat, her health still poor. At the end of five or six months I lost sight of her until about six weeks ago, when I was called by the same physician to see the same patient, it being then nearly a year and a half after the first occurrence. She was then in labor at term, with complete placenta previa. I will not take your time to describe that condition, but will simply say that I have tabulated some cases which go to show, as in this instance, that if a woman has had the one accident, tubal pregnancy or implantation of the placenta at the os, she will afterward be liable to the other. I once related a case, and another gentleman present related another, in which placenta previa had preceded tubal pregnancy. The interest in the present case is the fact that a tumor as large as one's fist had been absorbed.

The second case was that of Mrs. K., whom I was called to see in October, 1888. She had had one child before, and believed herself normally pregnant

again, until taken with acute colicky pains, which began about the fourth week. She then had irregular flow of blood at intervals of five or six days, which afterward became almost constant for nearly six weeks. I was called to see her about the tenth week, when I found a distinct oval tumor to the right and posterior side of the uterus, pushing the uterus toward the left and anteriorly. It was fluctuating, and could also be mapped out through the abdominal parietes. In this case a mass was cast off, which, according to the description given by the husband, who was a very intelligent man, was the decidua. Taking all the symptoms into consideration, I made a diagnosis of extra-uterine pregnancy. There had been no distinct sign of rupture of the sac, unless Dr. Janvrin's view be accepted that the colicky pains indicate the beginning of rupture. I at once applied the faradic current as strong as the patient could bear it without taking an anesthetic, and repeated it daily for five days. To make the result doubly sure, I also applied the galvanic current of about fifty milliampères. The pain ceased, and the tumor began to diminish in size slowly, and now, at the end of five months, is reduced to the size of a black walnut, feeling like an irregular, almost ligamentous mass posterior to the uterus, in the position of the right tube. The patient is able to be about, and is gaining in flesh and strength. The case was, I thought, beyond a doubt one of extra-uterine pregnancy. If not, then it was one of cystic tumor cured by galvanism. I prefer to think it was the former.

TRACTION UPON THE PLACENTAL CORD, AND INVERSION OF THE UTERUS.

DR. CLEMENT CLEVELAND.—About ten days ago I was called to attend a woman in confinement, according to previous engagement. I had confined her about four years ago in a perfectly normal labor. On ascending the stairs I heard the child cry, and immediately entered the room. The woman had had only two or three pains when the child came. It was a precipitate labor. Examination showed the child to be all right. The woman was not flowing. I tied the cord and handed the child to the nurse, and then gave my attention to the delivery of the placenta. I did what I always do—made gentle traction upon the cord, at the same time kneading the uterus very gently. I am positive that I used no more traction force than I always do, and I consider a certain amount desirable. While drawing gently upon the cord I felt the right horn of the uterus cave in, and before I actually realized what was taking place the uterus was completely inverted, the placenta, attached to the fundus, presenting between the woman's thighs. I then could not distinguish between placental tissue and uterine tissue. Without waiting at all, I pushed the whole mass with my hand into the vagina, when I recognized that the placenta was attached firmly all over the fundus. Blood came forth in torrents, while the woman suffered extreme agony. There was no time to give chloroform, and I had no person to aid me. I worked as rapidly as I could, and with the fingers of my left hand, in the form of a cone, pressed against the fundus, and with further aid from the fingers of the right hand, succeeded in indenting the fundus and finally reinverting the organ. Owing to the great amount of blood lost, the woman was nearly in a state of syncope, and I feared the worst. As quickly as possible hot water was got and pumped into the womb, at least two gallons being used. Until the moment of using the hot water the uterus was perfectly inert and

refused to contract in the least. A dose of ergot had previously been given. After injecting hot water a few moments the uterus began to respond, and after the two gallons had been used I felt quite satisfied it would not invert again. Tonic contraction took place, hemorrhage ceased, and the woman went on to a perfect recovery, without symptoms of any note.

As to the cause of the inversion, I believe it was due to my traction upon the cord, but, as I have just said, it was not greater traction than what I think is justifiable and should usually be made. But in this case I think it was a mistake. The uterus was inert, the placenta was firmly attached to the fundus, and I think the slight traction made was sufficient to cause inversion. I may say that in placing my hand into the vagina I felt that the cervix as well as the uterus was inverted. I have not made an examination since, although I believe there is marked laceration of the cervix.

In reply to a question, DR. CLEVELAND said he did not think the pressure made over the uterus was sufficient to have any influence in causing the inversion in this case.

DR. BUCKMASTER thought the place of attachment of the placenta probably had something to do with inversion commencing at the horn. He had never seen a case in which it was attached exclusively to the fundus.

DR. GRANDIN asked whether the main etiological cause of the inversion was not paralysis of the uterus following a precipitate labor, and whether in that case traction upon the cord would not have caused inversion whether the placenta were attached to the fundus or to the side. He asked Dr. Cleveland if the case did not teach us never to make traction upon the cord, since the placenta could be expressed without traction if there were not morbid adhesions, and where morbid adhesions existed neither traction nor expression would answer, and the former step might cause inversion.

DR. CLEVELAND replied that he thought he would keep on in his accustomed way.

DR. GRANDIN.—But Dr. Cleveland would not teach that as good practice?

DR. CLEVELAND.—Dr. Thomas always so taught, and I learned it from him.

DR. BUCKMASTER asked Dr. Grandin whether he accepted the teaching of the Edinburgh anatomist who declared that the placenta was usually detached entirely very shortly after delivery.

DR. GRANDIN.—I think that ordinarily within fifteen minutes after the completion of the second stage of labor expression should be tried. The placenta is then loosening from the uterus, and the organ is contracting, and that is why simple expression will, in every case where there are no morbid adhesions, expel the placenta and leave nothing behind in the uterus unless the membranes have been twisted off. That has been my experience. I was taught, not by Dr. Thomas, to make traction on the cord, and in about the first case I ever attended I made traction and felt the fundus beginning to invert. I then ceased to make traction, and will not make it again in order to remove the placenta from the uterus. It should be remembered, however, that expression is not called for until the placenta is loosened, and this in general only occurs when the uterus regains tone and contracts.

DR. CLEVELAND.—I had never believed very much in the adherence of the placenta, but here I had a case in which the fundus was outside the woman's body, with the placenta firmly attached to it, so that I could not distinguish between placental and uterine tissue.

THE PRESIDENT.—From my experience, which has been considerable, I do not expect the placenta to become detached until after contraction takes place. The contraction of the uterus detaches the placenta. It is possible for it to become detached nearly as soon as labor begins, but that is exceptional.

DR. ABBOTT asked Dr. Grandin whether he would not make traction on the cord if he had diagnosticated hour-glass contraction.

DR. GRANDIN replied that he would not, but would still resort to expression. Traction would simply tend to increase the condition by irritation of the organ. If expression failed, he would dilate the contraction ring manually and peel off the placenta.

DR. JOHN BYRNE.—Every experienced obstetrician of my acquaintance has been in the habit of making moderate and judicious traction on the cord at the proper time. I have always done it, at what I considered the proper time and in the proper manner, and I am sure that the uterus in normal condition after parturition will not be inverted by any amount of traction on the cord unless the placenta is firmly adherent. Many years ago I reported a case—I think at a meeting of this Society, at any rate, it was published in one of the early numbers of the *New York Medical Journal*—in which, immediately after delivery and before the cord was detached, on putting the hand over the abdomen to see what condition the uterus was in, I noticed very distinct cupping of the fundus. As I had seen inversion of the uterus before, I was somewhat informed of the process of inversion. I made no attempt to deliver the placenta for a long time, until regular action in the uterus in the way of contraction was brought about. Finally the placenta was delivered in this case without any traction being made. After delivery a very distinct cupping could still be recognized at the fundus of the uterus, and, although every caution was given the nurse with regard to keeping the patient quiet, and so on, the first muscular effort, probably coughing, was followed by complete inversion of the uterus. Now, the fault was in the condition of the uterus, not in the traction, and so I believe it was in the case of Dr. Cleveland. It was not traction that did it at all; or rather traction did it, but it would not have done it if the uterus had been in normal condition. There was irregular muscular contraction, the fundus was paralyzed and dropped right through.

DR. VON RAMDORF remarked that he wished to appear on record as holding the views expressed by Dr. Grandin.

Stated Meeting, May 7th, 1889.

The President, DR. H. T. HANKS, in the Chair.

DR. H. J. BOLDT invited discussion on the following case :

PRIMARY CANCER OF THE OVARY—MULTILOCULAR OVARIAN TUMOR—
ABDOMINAL CYST OF UNKNOWN ORIGIN.

The specimen presented has some interesting features in connection with it. The patient, 47 years old, was first seen by me four years ago. She was then suffering from a retroversion with salpingo-oöphoritis. After a short course of treatment she passed into the hands of another physician, and I saw no more of her until fourteen months ago, when the history was elicited that she had noticed the abdomen beginning to enlarge over a year before, the distention gradually increasing. For the past two months she had been unable to be about the house, remaining most of the time in bed or an easy chair on account of great weakness. She was very much emaciated and cachectic, the abdomen greatly distended, but not sensitive until deep pressure was made. The pelvic contents could not be mapped out, but in the vault of the vagina to the sides of the uterus some nodules were felt. Menstruation had been regular. The diagnosis rested between malignant disease and tubercular peritonitis, and an exploratory incision was advised. She entered my service in the hospital, and the incision was made on March 4th, 1888, when three and a half pailfuls of ascitic fluid escaped, followed

by a tubercular mass, which, after extending the abdominal incision, proved to be the omentum. It was densely adherent to the intestines, which were matted together to a greater or less extent. To all appearance the disease was cancer of the omentum, macroscopically; this impression was also conveyed to the gentlemen present. Seeing the uselessness of removal of the diseased omentum, the abdomen was washed out and closed, after tying off a small piece of the omentum for microscopical examination. The latter was sent to a pathologist, and was pronounced to be cancerous. The woman recovered from the operation without reaction, and felt very much better for two months, when the ascites had accumulated again to such an extent that I established permanent drainage in the line of my old incision. The former clear serum soon became thicker and assumed the character of thin pus, but gave her no inconvenience until some time in August, when the tube which had been left in the opening was removed by her, upon which the abdomen rapidly filled again, when Dr. Ingram, in whose charge I had left her during my vacation, reopened the wound and brought about the same comfortable condition previously existing, except that the discharge rapidly diminished. Four weeks ago the wound closed again, and she soon began to experience severe pain on the left side midway between the umbilicus and symphysis, which increased to such intensity that she could not rest without narcotics. From the 22d of March vomiting also began, and it was impossible for her to retain food for more than half an hour. I saw her on the 26th of March, and found a tumor extending from about five centimetres above the symphysis up to the umbilicus; it was semi-fluctuating, as large as a medium-size head, and *very slightly* mobile. In the left inguinal region was another smaller, immobile tumor, which was exceedingly painful to the touch. The excessive pain, however, came from the large tumor. There was no appreciable ascites present. I could not make a positive diagnosis, but the patient begged for removal of the large tumor which caused so much suffering, no matter what the result might be. On March 28th the abdomen was again opened at her home. The tumor presented a dark bluish-black surface, appearing like an ovarian tumor with twisted pedicle. A trocar was plunged into it without result, whereupon an incision large enough to introduce my hand was made in the tumor and the contents evacuated. These consisted of colloid material, some compartments stained with light red blood, showing recent hemorrhage into the sac; other masses, again, like small bunches of grapes, then again smaller isolated, gelatinous masses appearing like single large California grapes without the skin. The adhesions were so dense that it was impossible to remove the whole sac; as much as possible was cut off and the remaining part of the sac was treated in the usual way with drainage. Posterior to the large tumor, and entirely independent of it, near the vertebræ, was a smaller tumor as large as a medium-size orange, imbedded in exudation material. This was a cyst containing pus; its removal was exceedingly difficult, and it ruptured during enucleation. The hemorrhage was so profuse that tamponnement with iodoform gauze became necessary. On the right side was a cancerous ovary of the medullary variety, as large as two fists, and also quite firmly adherent. The patient did very well for thirty-six hours, when uncontrollable vomiting set in, which continued until she died.

The most interesting features are :

1st. *The thickened tubercular omentum, which was macro- and microscopically considered cancer, and the agglutinated intestines when laparotomy was done fourteen months ago, all of which were in a perfectly normal condition at the time of the last operation.* It is claimed by some that cancer occasionally is curable, and the gentleman who made the examination firmly believes that this was such a case. I never have seen an instance of it, though, unless this be one.

2d. The rapidly growing ovarian tumor and the peculiar contents, which, unfortunately, were destroyed at once by the nurse, so that a careful examination could not be made.

3d. The cyst of unknown origin.

THE PRESIDENT remarked that several cases had been related at meetings of the Society in which there was supposed malignant disease of the peritoneum which after a time had entirely disappeared; but, unlike Dr. Boldt's case, in none had the pathologist had opportunity to verify the diagnosis by microscopic examination.

POLYCYSTIC OVARIAN TUMOR.

DR. J. E. JANVRIN presented the specimen and related the case as follows: A maiden lady, about 53 years of age, a native of Baltimore, was tapped twice some twenty-three years ago in pretty rapid succession by the late Dr. Nathan Smith, of Baltimore, who had made the positive diagnosis, she said, of fibrocystic tumor. After the second tapping the tumor did not refill for a number of years. During the last five years she had been a resident of New York, and had consulted quite a number of resident gynecologists, several of whom were members of this Society, all of whom concurred in the diagnosis of a fibro-cyst.

She came under my care about two months ago, in an extremely emaciated condition, weak and anemic, and not in condition for any operation whatever. I examined her carefully at my office, and found the uterus pressed over to the right side, two inches being as far, under the mechanical difficulties present, as I could pass the probe. In other words, I was not certain whether the mass was a large polycyst of the ovary or a large fibrocyst growing from the right side and upper portion of the uterus. At any rate, she was in such a critical condition that an operation could not be entertained at that time. Recognizing that it might be a fibro-cyst, or that, at any rate, the tumor contained much fibrous element, I placed her under the care of Dr. Gunning for the Apostoli treatment (by electricity). She remained under his care six weeks, with the result that the tumor had risen somewhat in the pelvic cavity, was smaller above so that there was less pressure on the diaphragm, more pointed at the umbilicus, and more prominent at the centre of the abdomen. She did not, however, rally in strength at all. In fact, I think she was a little weaker at the end of the six weeks than when I first saw her. She begged to have the tumor removed, saying that she would much rather take the chances of the operation, even if she were not in condition to undergo it. I took her to the St. Elizabeth's Hospital two weeks ago, built her up as much as possible during the two weeks, and on Friday last ventured to operate, being as much prepared, however, to perform a post-mortem as an ante-mortem operation. Much to my sur-

prise, however, she did go through the operation itself fairly well. On making an incision of medium length, I found what I had expected to find, namely, firm adhesions all over the abdominal parietes. Still, they were released without much difficulty. Having liberated the adhesions anteriorly, I passed my hand down in the left inguinal region, when, without any force whatever, I felt my index finger go into something, and on withdrawing it a little air and fecal matter escaped. Of course I thought I had ruptured the gut about the sigmoid flexure, and proceeded as rapidly as possible with the operation. Little further difficulty was experienced in removing the tumor. There was a long pedicle on the right side, which was ligated at once. The tumor was entirely free from the bladder and uterus. The uterus was small and in the position in which I had previously found it, in no way connected with the tumor. It was a large polycystic ovarian tumor, which, after evacuating the larger ones as far as possible, I lifted from the cavity and then saw a point of attachment to the left extremity of the transverse colon. It was stripped off very carefully, and a communication was found to exist between the intestine and the larger cyst, which was filled with fecal matter. With the aid of my assistant, the escape of feces into the abdominal cavity was prevented during the separation of the sac from the colon. The tumor was removed. The intestine was observed to be gangrenous for a space of three-quarters of an inch in diameter, and pouted into the sac, showing that the perforation had existed a long time. I cut out the diseased portion, closed the intestinal opening with catgut, flushed out the abdominal cavity very carefully with a large quantity of hot water, which stimulated the patient, as it usually does. During the operation she had received hypodermic injections of digitalis and brandy. Very few hemorrhagic points required a ligature. As usual, I closed the peritoneum with catgut and the abdominal walls with silk. She rallied very little after the operation, and died of exhaustion after about ten hours.

The case was interesting on account of the long duration of the disease, which, up to about three months ago, had been recognized as fibro-cystic, the same diagnosis having been given by every physician who had seen her. It was also interesting on account of the perforation which had taken place from the colon into the sac. It is probable this had existed several months, during which time it had led to septic poisoning and general depreciation of health.

DR. TUTTLE inquired whether there had been any colloid material or other peculiarity noticeable in the discharges.

DR. JANVRIN.—Nothing which the patient had ever spoken of. The movements during her stay with Dr. Gunning and in St. Elizabeth's were very offensive, but it is not known that they contained other than fecal matter.

THE PRESIDENT asked Dr. Janvrin whether he supposed the use of electricity had had anything to do with causing the fistulous opening from the colon into the sac.

DR. JANVRIN replied that he did not think it had. The pouting of the colon into the sac, the gangrenous state, the septic condition which the patient had shown since he first saw her, indicated that the fistulous opening had existed prior to that time. Moreover, before undergoing electrical treatment the patient had suffered excruciating pain in the left iliac region, corresponding to the site of the fistulous opening. He replied to a further question by the President that the electrode was introduced, not into the rectum, but into the vagina to the neck of the womb.

FETAL MONSTROSITY.

DR. C. JEWETT presented the specimen. There was absence of one lower extremity. Of the other, only the thigh and tibia were present. There were no external genital organs, but dissection had not been made to determine to what extent development had gone on within the pelvis. Club-hand existed on either side. The stage of gestation was supposed to be the seventh month, but Dr. Jewett thought, from the appearance of the fetus, that it was at least the eighth.

DR. GRANDIN inquired whether there was a history of maternal impressions.

DR. JEWETT.—The woman had borne one child before. I asked her whether she had had any strong mental impression, not, however, because I had any faith in that theory. Nothing was learned which would throw any light on the question.

DR. GEORGE M. TUTTLE.—I have here several specimens, the first being one of

HYDATIFORM MOLE,

removed from a woman who, six months previously, had given birth to a child. For three months she had noticed enlargement of the abdomen, the increase in size being rapid the last several days; an ordinary wooden bucketful of cysts was removed. The uterus did not contract well. Its surface was first scraped with the hand, and afterward with the curette. As it still did not contract, it was stuffed with iodoform gauze in the manner described here at a previous meeting. It then contracted promptly, and the patient convalesced well.

The next specimen is one from a

HYSTERECTOMY FOR CANCER

on a patient who had been refused an operation by a prominent gynecologist of Philadelphia, on the ground, the patient said, that it could not be removed. She came to New York, and Dr. Thomas, who was of the opinion that it could be removed, sent the patient to my service at the Cancer Hospital. Apparently the primary nodule was at the cervix, and a secondary one near the vaginal fornix, the latter probably having deterred the specialist in Philadelphia from the operation. I thought the perimetrium was free and that removal was justifiable. I went up on the left side, came down on the right, clamped off one side entirely, using no ligatures. Ten days after the operation a little urine escaped per vaginam, showing that a slight slough had taken place between the bladder and vagina. The temperature did not rise above 99° F. The patient went home, occasionally passing a little urine by the vagina, but she is able to retain ten or twelve ounces. I was unable to find the fistula; it was probably high up. Except for that, the patient is in good condition.

TUBERCULAR DISEASE OF THE OVARIES, APPARENTLY PRIMARY.

The next specimen is one of apparently primary tubercular disease of the ovaries, tubercle bacilli having been found in both ovaries by the pathologist of Roosevelt Hospital. The case was the most desperate one I have operated upon; but, having begun, I was unable to stop. The hemorrhage was great; about one-third of the upper surface of the bladder had to be removed and

drainage was established through the vagina. The patient did not live long after the operation. The ovaries looked sarcomatous.

STRANGULATION OF AN OVARIAN CYST BY FOUR TURNS OF THE PEDICLE.

The last specimen which I have to present was one removed lately from an ignorant Irish girl, who had not known that her abdomen was enlarged. Three days before admission she had been seized suddenly with symptoms of shock and internal hemorrhage. When she entered she had general peritonitis. I operated immediately; found the cyst black and attached to the abdominal wall; layers of greenish-yellow fibrin covered the bladder and intestine; there was general peritonitis. The cyst was twisted four times upon its pedicle, the direction being from left to right. The operation itself was simple enough, lasting but twenty minutes, and the patient recovered without difficulty.

DR. W. GILL WYLIE.—The tubercular specimen was quite interesting to me, for I have myself removed quite a number of them, and, in the great majority of cases where the patient's general health was good, the result has been admirable, usually giving no trouble afterward. In those cases, the disease has been strictly confined to the tubes and ovaries, more especially, I think, to the tubes. But I have had one or two cases, certainly one, in which I am satisfied the tubercular disease continued to develop after removal of the appendages. It was in a woman of about 43, whose general health was very bad, being septic when I operated upon her about eighteen months ago. Having first put her into as good condition as possible (these patients do not require much strength to stand the operation, if hemorrhage and sepsis can be avoided), I did the operation; but she recovered from it slowly, never became perfectly well, and examination showed so much thickening about the uterus and broad ligaments that it was a question whether cancer had not developed. To learn what the condition was, I opened the abdomen again, and to my surprise found what I am convinced was extension of the tubercular disease to the intestines and adjacent tissues. The patient is doing pretty well, the bowels move, but there is infiltration, and I am very sure the disease will progress and probably end fatally in a short time. I had never seen a demonstrated case of the kind before. In all such cases we should do our best to improve the general condition, keep it good, so that the disease shall remain as limited as possible.

HYDATIFORM MOLE.

DR. C. E. DENHARD presented a large specimen of hydatiform degeneration of the placenta, in the case of a woman married eight years, childless, who finally became pregnant, went to the ninth month, engaged her physician, was three hours in labor, when this mass was expelled. Hemorrhage was slight.

IMPROVED IRRIGATION TUBE.

DR. P. F. MUNDÉ.—I would like to show an improved irrigation tube, being simply a Fritsch uterine catheter modified. The Fritsch uterine catheter, as you will see by the one shown, has a solid metal tube in the centre which it is very difficult to keep clean, and which, unless kept clean, will induce septic infection. I have attached a piece of rubber tubing, which irrigates just as well, and, being inexpensive, is thrown away after each usage. The instrument has been constructed with four openings, one behind and in front, in addition to the two lateral ones seen in Fritsch's catheter, and I think will therefore irrigate better. It is very simple, and I have found it to be very useful.

SERRATED CURETTE.

DR. G. E. ABBOTT.—I have here a curette which speaks for itself. I should like to have it criticised, in order that any faults which it may possess may be brought out. It is much like the Sims curette, or that which belongs to the President. It is serrated so that it will work more easily and rapidly, and remove any fungosities which might escape the smooth curette. It has different sized ends, which screw on the same stem. The criticism has already been offered that it may do injury, but I would say that it is not intended for diagnostic or exploratory purposes; its use is entirely surgical.

DR. WYLIE remarked, regarding the catheter presented by Dr. Mundé, that the rubber tube was an improvement in that it could be thrown away and a new, clean one substituted. In his experience, in washing out the uterus the first object to be accomplished was free dilatation. Then, by putting in a Chamberlain tube or stiff catheter, a good stream could be thrown in and flow out around the sides of the instrument and bring away all débris.

DR. GRANDIN inquired whether Dr. Mundé had presented the catheter as a substitute for the Chamberlain tube in puerperal cases.

DR. MUNDÉ replied that he presented it only as a substitute for Fritsch's catheter. The great objection to the Chamberlain tube was its being cumbersome to carry and liable to break. He had used Fritsch's, and it had occurred to him that this would be a good substitute for it. He thought the Chamberlain tube was excellent, if one could always have it at hand.

DR. BUCKMASTER.—In buying the Chamberlain tube I have thought it unnecessarily expensive, and have therefore had a glassblower make one which costs but a third as much. It is also made of thicker glass and not so long. Those three facts make it much more desirable than the Chamberlain tube. In fact, the cost is so much reduced, being only twenty-five or thirty cents, that, if desired for cleanliness, a new one can always be used.

DR. WYLIE.—Dr. Abbott having invited criticism on the curette, I would say that one objection to it is the screw, which renders it difficult to clean. With the Sims curette, if properly made, one can do all the scraping that is necessary. There is danger by this one of injuring the healthy mucous membrane. With the Sims curette the expert can say almost to a certainty whether the surface which it is passing over is in a normal or an abnormal condition. If there were an indolent surface and it were desired to make it raw, the curette presented by Dr. Abbott would do. I have always been an advocate of the steel curette in preference to the one of copper.

DR. JANVRIK.—I would offer one more criticism, which is in line with that of Dr. Wylie with regard to the screw attachment for these points: it is the possibility of their becoming unscrewed while in the cavity of the uterus. If the screw attachment be not dispensed with altogether, it should be some distance outside the uterus, so that if the curette proper should become detached it would have sufficient stem projecting that it could be seen and removed.

DR. MUNDÉ.—I had two curettes made several years ago for the purpose of curetting the uterus after abortion and confinement, one with a round loop and another with an oval loop, with a screw attachment to avoid the necessity for making two instruments; but I gave it up for the reason that the point was likely to become unscrewed, or a bend to take place at the junction. I now have two separate instruments.

DR. BUCKMASTER thought that in criticising a curette one should bear in mind the different indications. For instance, the after-birth, especially if it had remained a few days, could readily be removed with the blunt hook, whereas fungosities required more force than could possibly be exerted through the slight wire of Dr. Thomas. He had had occasion to repeat some work which might better have been done in the first place by an

instrument like the one presented by Dr. Abbott, although he must say that he did not like the end attachment.

DR. ABBOTT.—I thank the gentlemen for their criticism, but I think that ordinarily they will not find the end of the instrument turn on the shaft.

DR. G. M. TUTTLE read a paper on

FOUR CASES OF ECTOPIC GESTATION.¹

DR. P. F. MUNDÉ.—I came here to hear the paper of Dr. Tuttle, and am glad that I came. I think the author has given a very excellent history of four very rare cases. I think he struck the keynote when he said that even in the best hands the diagnosis is liable to prove erroneous. I believe Mr. Tait has said that ectopic pregnancy cannot be diagnosed until laparotomy has been performed. I never believed that assertion, for I have myself made the diagnosis without doing laparotomy, and I believe a great many others have done the same. But I wish to report a case in illustration of the difficulty of diagnosis—a case which I would have reported even had Dr. Tuttle not read a paper on this subject. Under the circumstances I think it is quite apropos.²

I am doubtless one of those to whom Dr. Tuttle referred when he mentioned the use of electricity, for I have reported a case of tubal pregnancy cured by the galvanic current. I believe in the treatment of early tubal pregnancy by electricity—that is, by the faradic current, for I now think the galvanic current is dangerous. Still, I confess that where one's diagnosis is sure it is very tempting to operate. It is very brilliant to bring these specimens here and read and talk about them. It sounds better than talking about a cure by electricity, in which case some doubt may be thrown upon the diagnosis. It is much more brilliant, and I might be tempted to do laparotomy. I may confess that I am really "on the fence." My one case treated by electricity proves nothing; but, taken with others, it has shown that, in tubal pregnancy, up to the third month gestation can be arrested by electricity and the woman remain well thereafter. That she may possibly later on have salpingitis on that side cannot, of course, be denied; it is possible for that to happen to all women who have not had the tubes removed.

DR. BUCKMASTER inquired of Dr. Mundé how far pregnancy had advanced in the case he had related.

DR. MUNDÉ replied, about the fourth month.

DR. BUCKMASTER further inquired whether he had listened to the fetal heart.

DR. MUNDÉ.—I have never heard the fetal heart under the sixth month. It has never been heard under the eleventh week. This woman had hardly gone to the fifteenth week.

DR. BUCKMASTER.—I have often heard it at five months.

DR. MUNDÉ.—I never have, but I know it is stated to have been heard at the eleventh week.

DR. JEWETT, having been asked how early the fetal heart could be heard, said it had been stated that it had been heard at the eleventh or twelfth week, but that he had never heard it that early.

DR. WYLIE.—As one man has spoken in favor of electricity, I would speak against it. Perhaps Dr. Tuttle has included me in his statements. I confess that I have never made a diagnosis of extra-uterine pregnancy before the fourth month. I have made the diagnosis at the fifth, sixth, seventh, eighth, and ninth months, but I have never been able to make it satisfactorily in the early months. I have operated in three cases in which the diagnosis of extra-uterine pregnancy had been made, in two of which a supposed cure by electricity had been recorded, and at my operation no sign could be found of extra-uterine pregnancy having existed, and I do not think it had. The cases were simply those of tubes dilated with fluid. One tube contained over two pints of fluid.

I suppose it is possible to make an early diagnosis, yet I believe it must

¹ See original article, page 13.

² See original article, page 23.

always remain uncertain when under the third month. Ever since I have understood laparotomy I have advocated it in extra-uterine pregnancy before rupture of the sac. It seems to me that before suppurative takes place it can be done without a death rate of more than one or two per cent. Dr. Mundé speaks of these cases as being rare. I think he is mistaken. In my first hundred operations for diseased tubes and ovaries, when I knew little about extra-uterine pregnancy, I found one fetus when I least expected it. The duration of pregnancy was between the third and fourth months. Among the remainder of the hundred specimens, which were examined later after their contents had pretty well oozed out, there was good evidence of a placenta in three—thus showing that extra-uterine pregnancy was present in four per cent of one hundred cases where it had not been expected. I have not the slightest doubt that in a number of cases where the operator has stated that a large hematocele or a large amount of blood clots were found, when there had not been a history of previous uterine disease leading up to pyo-salpinx, the condition was one of extra-uterine pregnancy. I doubt not that in a good percentage of cases of tubal and ovarian disease the condition started as an extra-uterine pregnancy, which did not go far before the fetus died. If I had a relative with extra-uterine pregnancy, or with symptoms thereof before the third month, I would much prefer to have an expert do laparotomy than to use electricity. I am satisfied that a large percentage of cases supposed to have been cured by electricity were not cases of extra-uterine pregnancy, although there may have been some. Dr. Tuttle's cases were well worked up, and well reported. I have no criticisms to offer.

DR. A. H. GOELET.—I would only say that if the exploring needle were used carefully some cases might be cured without laparotomy. In 1887 I requested Dr. George T. Harrison to see a case supposed from the history to be one of pelvic hematocele. While he was present we used the exploring needle and found pus. It was thick and did not flow freely. An incision was made, the finger introduced behind the uterus, and a fetus of about the third month, in a state of decomposition, was felt and removed. The cavity was drained through the vagina and the patient made a good recovery.

Within the past three years I have had three other cases of extra-uterine pregnancy, or they were supposed to be such. One, which has already been reported, was seen in consultation by Dr. Rockwell and Dr. Lee, both of whom confirmed the diagnosis. The interrupted galvanic current was used. It afterward produced absorption. The other cases I saw alone, and consequently there was no one to confirm the diagnosis, yet I believe they were cases of ectopic gestation. They were cured. I cannot conceive why Dr. Mundé should regard the interrupted galvanic current as dangerous. The strength necessary to destroy the fetus certainly cannot be dangerous. I have accidentally had the current interrupted with three hundred milliampères, and feared trouble, yet none ensued. The patient was under ether. That being true, I do not know why about twenty cells should be dangerous. I think one reason for want of confidence in the treatment of these cases by electricity has been the use of the faradic current. I have not much confidence in anything but the galvanic current. To be effectual it must come as closely in contact with the fetus as possible when applied on the surface of the abdomen. For instance, I once tried to bring about abortion in a patient who had phthisis, thinking it best pregnancy should not go on to term. I used as many as twenty-five cells of the galvanic current, but failed. I cannot say what was the exact strength of the current, having had no meter for its measurement. It was used three different times, but without result. I believe the uterine walls prevented its killing the fetus. But in extra-uterine pregnancy the intervening tissue is frequently very thin, and in such cases I think the fetus can be killed. Again, in many cases the treatment is not followed up. I believe we can cause the fetus to be absorbed as well as we can blood clot.

DR. MUNDÉ asked Dr. Grandin if he did not recall a case in which about the severest shock he had ever seen was caused by the use of twenty-five cells, galvanic current.

DR. GRANDIN replied that he recalled the case.

DR. H. J. BOLDT.—It seems to me the remarks of Dr. Goelet should not go forth from this Society without some criticism. I refer more particularly to those on the use of the exploring needle. I think the sooner it is recognized that the exploring needle should be let alone, the better it will be for our patients. I do not think any one should use it in these cases. What good can come from it? Unless one is prepared to operate immediately after its use, he will cause trouble.

With regard to the use of electricity, my views coincide with those expressed by Dr. Tuttle and Dr. Wylie. In cases of ectopic gestation claimed to have been cured by electricity, I think the diagnosis was very doubtful. If the abdomen had been opened, I think the probabilities are that something different would have been found. Then, if I felt sure of the diagnosis of tubal pregnancy, I should prefer to use the knife to using electricity, for the very good reason that removal is attended with as little danger as removal in ordinary tubal disease. I should at least prefer the knife to electricity in the majority of cases.

DR. E. H. GRANDIN.—I wish to say a few words with regard to diagnosis. I am willing to grant that the diagnosis of extra-uterine pregnancy prior to the third month is difficult, but I fail to see why there should be much danger of mistaking a uterine pregnancy for an extra-uterine. I tried to make this point some four or five years ago when reporting a case of abdominal pregnancy. I then laid stress on the existence of a valuable diagnostic point, namely, intermittent uterine contractions. Without wishing to criticise Dr. Mundé's case unfavorably, I may express the belief that before opening the abdomen he might have found a sign which, had he searched for it, would have saved him the error.

DR. MUNDE.—There were no such contractions.

DR. GRANDIN.—The doctor stated in his report of the case that on opening the abdominal cavity and inserting his hand he could feel contraction. Possibly careful palpation before laparotomy would have enabled him to detect the same contractions. Within the last two or three months in this city the abdomen has been opened more than once under the impression that tubal pregnancy existed, and uterine pregnancy was found. Dr. Mundé's is the third case with which I am familiar. The other two cases occurred in the hands of gentlemen who are called experts. For this reason alone, that in the early months, say under the third month, the diagnosis of tubal gestation is so uncertain, I think it is wiser for the safety of the woman to use electricity—which can do no harm, and may kill the fetus if it is outside the uterus—rather than to open the abdomen, perhaps cut into the gravid uterus, perhaps kill the woman. Some women do die from laparotomy, even in the hands of the most expert. No woman, so far as the reports state, has yet been killed by the use of electricity prior to the third month of tubal gestation. In the early months, then, when the diagnosis is in doubt, and in the absence of symptoms of rupture, electricity, it seems to me, ought to be favored by this Society. This Society speaks not alone to gentlemen who live in New York, who have ample opportunity for doing abdominal section, but its words reach in a measure gentlemen who live outside of New York, who may never have done abdominal section, whose patients cannot afford to send to New York for an expert, even if the expert were willing to go, unless he got good remuneration.

Electricity, then, under the third month, with absence of symptoms of rupture, I would advocate. At most it can do no harm, and it may do good. If it kill the fetus, the woman is saved immediate risk. If at some future time there should be symptoms of suppuration, it would be just as easy then to open the abdomen and take out the suppurating tube, and it would not subject the woman to more risk than would immediate laparotomy. Perhaps after the third or fourth month, when the fetus is larger, to open the abdomen is the safer thing to do. I wish to record myself as not being afraid to open the abdomen prior to the third month, for it is a simpler matter to remove a non-adherent tube enlarged by a fetus than to remove the adherent tube containing pus. In other words, primary lapa-

ratomy under the third month of tubal pregnancy is a simpler affair than laparatomy for pyo-salpinx; it is not difficult to do; it is, however, more brilliant than to use electricity. For the latter reason I would rather bring here a tube containing a fetus than report a case where I thought I had killed a fetus by electricity. But I am satisfied I would not have subjected my patient to as great a risk if I used electricity as if I had done laparatomy.

DR. BUCKMASTER.—As bearing on diagnosis I would mention the case of a woman who was sent me with fibroids which I treated with galvanism. There were all sorts of fibroids present, some within the walls, some on the outside. The patient improved very much under treatment, and in the spring I recommended a trip to Europe. She went, and in a couple of months came back to me and said she had not menstruated. Being pretty well toward the usual date for the menopause, I thought it possible that state had arrived, but still advised her to wait a time before renewing treatment. She thought that, having been much improved, she would prefer to continue the treatment until all the symptoms had quite disappeared. She could feel the uterine masses, which were about the only signs present at that time. The third month since menstruation had ceased she sent for me while in great pain. She said she had lost about a tablespoonful of blood. Thinking pregnancy could be eliminated, I applied electricity with the patient under chloroform, as she was very sensitive. I gave twenty milliamperes for twenty minutes. Between the fourth month and a half and the fifth month the gentleman who had sent the patient to me said he thought he heard the fetal heart. The abdomen had enlarged a great deal. I went to the patient's house and confirmed the diagnosis of pregnancy. In that case the fetal heart was heard before the fifth month, and I was a little surprised to hear so eminent an authority as Dr. Mundé speak doubtfully of hearing the fetal heart at that period. I am sure I have often heard it by the fifth month. That would have been an important point in Dr. Mundé's case. In our patient the fetus continued to grow and was born at term during a difficult labor. The fact that twenty milliamperes failed to destroy the fetus, which had passed the third month, does not destroy my faith in the use of electricity in extra-uterine pregnancy. It showed merely that the current used was not sufficiently strong. I would like to express myself as entirely in accord with everything Dr. Grandin has said.

DR. J. E. JANVIN.—I presume I have to bear the honor of being the member of this Society who first used the term primary laparatomy, meaning thereby operative interference even before the expiration of the third month of extra-uterine pregnancy. I presume also that I am the one who has to bear the brunt of having steadfastly advocated primary laparatomy by the expert diagnostician and laparatomist in preference to the use of electricity in any form. I may say that I yet certainly adhere firmly to the same belief. I believe that in a large proportion of cases we do recognize extra-uterine or tubal pregnancy prior to the fourth month, and prior to any actual rupture of the tube itself. I think that in all such cases there is an aggregation of symptoms which, when looked at carefully, dispassionately, lead one to that diagnosis. It is that aggregation of symptoms which distinguishes such cases from those of pyo-salpinx, hydro-salpinx, abscess of the ovary or pelvic tissue, from metritis and pelvic cellulitis. It is simply those symptoms taken in their entirety which have convinced me that the diagnosis can be made in a great many cases. Now, if we do have those symptoms (and I have tried to make them clear on three or four occasions the past few years), and we are convinced that it is a case of tubal pregnancy, I contend now, and am glad to hear Dr. Tuttle and Dr. Wylie take the same ground, that it is better for the experienced operator to remove the mass before actual rupture takes place.

The three principal symptoms in diagnosis when taken in conjunction are these: the presence of a mass on one side or other of the uterus, the shedding of the decidua, and the presence at intervals of excruciating, colicky pains, so termed. Those symptoms must be present in all cases, together with ordinary symptoms of pregnancy; and when they are present I think we can be pretty sure that the case is one of tubal pregnancy.

I presume all the members of this Society know pretty well what my ideas are as to the cause of the colicky pains; I believe it to be simply stretching and partial laceration of the covering of the tube, and that with it there are slight hemorrhages. I think that has been proven the past few years by cases presented at meetings of this Society, and those reported by members of the profession in the western part of our country.

After making the diagnosis the question will arise, Shall we perform laparotomy or resort to electricity? I certainly have never recommended that any one perform laparotomy who is not accustomed to do the operation, who is not a good laparatomist; and I certainly would not attempt it myself unless I had all those symptoms present. With those symptoms present, convinced of my diagnosis, I would perform abdominal section and see what I had to deal with. It is certainly justifiable under such circumstances. If it should not prove to be tubal pregnancy, it must be something else which should be dealt with surgically. We are all liable to err, and among the three cases referred to by Dr. Grandin I recognize one as having been in a patient whom I saw with a gentleman well known to the members of this Society. Early in the winter the doctor brought the patient to my office, and at my first examination I excluded tubal pregnancy. I did not see the patient again for a month, when the doctor came to me and said he was firmly convinced it was a case of tubal pregnancy, and requested me to see the patient again. I did see her again, and made an examination under chloroform. She had had no attacks of acute colicky pain, there had been no shedding of a decidua, but aside from those two points she did have symptoms of pregnancy, and the mass seemed, as in Dr. Mundé's case, isolated and to the right of the uterus. After thinking the matter over carefully, I told the doctor I thought it was justifiable, at any rate, to make an exploratory incision and see what we had to deal with. He did make the incision, and it was found that it was the pregnant uterus. This lady had had one child about three years before. On discovering that it was the pregnant uterus the abdomen was closed. The patient developed septic peritonitis and died, which certainly was a very unfortunate circumstance. Nevertheless, that case would not shake my confidence at all in the belief that where all the symptoms described are present the exploratory incision should be made, and in the majority of cases I believe we would find tubal pregnancy.

DR. MUNDÉ.—I would add one word with regard to my case. I did not use electricity, for I thought pregnancy was too far advanced. I should not wish to kill a four months' fetus in that way, but should rather limit the use of electricity to two months. With regard to intermittent uterine contractions, bimanual palpation was repeatedly made, and they were not felt until the hand had been introduced into the abdominal cavity. The pains complained of were almost constant, and the patient earnestly desired something done to relieve her. I do not see how I could have made the diagnosis in this case except accidentally by slipping the sound up the pregnant side of the uterus. The patient had had one child, and I am confident the pregnancy must have been in the left horn; and I have an idea that the right horn, which was pregnant the last time, must formerly have been rudimentary, and that, after all, her condition must have been a serious one, there being danger of rupture of that horn.

DR. JANVRIN.—Perhaps I did not make it clear when I said the pregnancy in the case I just related was similar to Dr. Mundé's. It was in the right horn of the uterus; the fetus was expelled about forty-eight hours after the abdomen had been opened, and the patient died the day subsequently.

THE PRESIDENT.—Still, you did not suppose it was a uterus bicornis?

DR. JANVRIN.—No. The uterus was not handled at all. It was found that the fetus was in the right horn of the uterus, and the abdomen was closed.

DR. CHARLES JEWETT.—One point has not been touched in this discussion. Three of the cases described by Dr. Tuttle were cases, as I understood him, of retroperitoneal hematocoele which had become more or less encapsulated. That is precisely what Mr. Tait says does not occur. He says every case of intraperitoneal rupture ends fatally from hemorrhage.

A practical difficulty in these cases is that patients do not present themselves until after rupture has occurred, which, of course, precludes diagnosis prior to that event.

As to the use of electricity, I have no doubt of the possibility of killing the fetus by that means, but recent progress goes to verify the position of laparatomists. I still believe, however, there is a field for electricity, and if it fail laparotomy may step in with no less success than before.

One word more with regard to the aspirator. Certainly no treatment of extra-uterine pregnancy can be worse than puncture and attempted withdrawal of fluids.

DR. GOELET said he did not refer to extra-uterine pregnancy when he spoke of puncture, but to pelvic tumors in which there was fluid, and a doubtful diagnosis. He did not recommend it in extra-uterine pregnancy.

DR. JEWETT remarked that the practice was almost as dangerous in those other conditions.

DR. WYLIE.—Some years ago I observed, and called the attention of some men longer in practice than myself, who were present in consultation, to the fact, that early in extra-uterine pregnancy the condition often resembles that seen early in uterine pregnancy, in which the change in the organ manifests itself in one cornu and the sound may be passed without touching the fetus. Time alone will settle the diagnosis in such cases.

DR. TUTTLE.—It is impossible, Mr. President, to do any summing-up of the discussion. I am reminded of the familiar saying that if half a dozen men witness a fight no two will give the same account of it; and it is strikingly true, I think, that if a dozen men hear a paper read, at least a part of them will not get the speaker's ideas, especially if he express himself clumsily, as I have done. One point which I wished to make strong in my paper little was said about in the discussion—that is, that the object of electricity is to kill the embryo. It seems to me that I have shown that in some cases death of the embryo is followed by very grave dangers. That fact has been passed over in the discussion.

I would ask a question of Dr. Mundé, as he is one of the persons whom I had in mind. He said he is still a believer in electricity. He was very much a believer when he first talked with me on this subject. Now he says he is "on the fence." I am expecting him to get down on my side, as he certainly will within a year or two. He said if he had a case before him he should be very much tempted to operate. I do not see any temptation in the brilliancy of the operation. I think we ought to be more proud of the cases we carry through and relieve than of the specimens which we may bring here. I do not see any great temptation in doing primary laparotomy for extra-uterine pregnancy. It seems to me the matter lies in a nutshell; the patient's safety requires it. I would like to ask Dr. Mundé what would be his object in leaving an extra-uterine pregnancy to treatment by electricity, when he is doing laparotomy constantly for hydro-salpinx and for the relief of pain and other subjective symptoms. Why would he allow the woman to run a very great risk because he thinks electricity may kill the fetus? I cannot see why Dr. Mundé personally should leave these cases to electricity; I can see a reason for a great many men doing so. I do not think that this Society should encourage reckless resort to laparotomy, or to the use of the knife in any case, but my own view is that in extra-uterine pregnancy the patient runs greater risk by not having laparotomy performed than by submitting to it. I feel sure that this is true, at least as it applies to the majority of the members of this Society, and I do not believe that Dr. Mundé is correct in his judgment when he hesitates to do laparotomy or resorts to any other measure.

I cannot allow the remarks of Dr. Goelet to pass without also very earnestly protesting against their going forth, at least as expressing the views of this Society. I believe it is unsurgical to puncture an obscure fluctuating mass in the pelvis.

DR. BUCKMASTER misunderstood me most seriously. I said nothing whatever about the use of electricity in my own hands after rupture had occurred. That, it seems to me, would be nonsense, unless it were done with

some such view as that it would favor absorption. I should no more think of using electricity to cause absorption of a fetus than to cause absorption of a piece of bone.

THE PRESIDENT.—In order to clear up one point, I would ask Dr. Tuttle a question; it is, whether death of the fetus in his cases would not have been attended by very different conditions had it been brought about by the use of electricity before rupture had occurred.

DR. TUTTLE.—The object in using electricity is to kill the embryo, and the operator hopes that shrinkage and absorption will take place; but I do not think the process is essentially different from what is seen in the other cases.

DR. MUNDÉ.—I wish to say one word, as Dr. Tuttle has criticised my position. He did it very handsomely, and I appreciate the way in which it was done. I only wish to say in explanation of my position now being a conditional one, different from what it was several years ago, that I had then had one successful case treated by electricity, galvanism being the form employed. I did not doubt the diagnosis of tubal pregnancy, and it was confirmed by Dr. Emmet. Again, as long as we can avoid mutilating a woman by an incision or removal of any of her organs, we ought to do it. I grant the latter is, perhaps, a trifling reason, certainly one which would not be sufficient to deter me from operating where I consider an operation a safe and proper procedure. I am perfectly willing to admit that I am likely to jump over on Dr. Tuttle's side of the fence at some time, although, for the reasons given, I am not at present prepared to do so.

DR. JANVRIN.—I would ask whether removal of a tube with a fetus in it is any greater mutilation than destroying the fetus by electricity and leaving it in the tube during the remainder of the woman's life? I think that the latter is the greater mutilation. Certainly the tube would be useless.

Stated Meeting, May 21st, 1889.

The President, DR. H. T. HANKS, in the Chair.

EPITHELIOMA CORPORIS UTERI; VAGINAL HYSTERECTOMY; RECOVERY.

DR. H. C. COE showed a uterus which he had removed per vaginam, and related the following history:

Mrs. C., æt. 55, a widow, had borne seven children, the youngest being 14. Her grandmother and an aunt died of carcinoma uteri. She passed the menopause at 48, and enjoyed perfect health until nine months since, when she first noticed an occasional slight bloody discharge from the vagina, which later became quite constant but odorless, and was accompanied by backache and occasional shooting pains through the pelvis. Her health was not impaired, and she presented the appearance of a robust woman. Two or three months before she was seen by Dr. Coe, he examined some material curetted from the uterine cavity by the late Dr. Hunter, not knowing the history of the patient, and reported that it was probably round-celled sarcoma; he afterwards learned that this was the patient in question. During Dr. Hunter's illness she was sent to the Cancer Hospital by her physician, Dr. Pettit, and came under the reporter's care. He examined her several times, removing with the curette bits of soft, friable material, which under the microscope presented numerous groups of cells of an epithelial type, but no distinct cancerous structure. The uterus was large, retroflexed, and fairly movable; the endometrium was soft and spongy, bleeding easily. As the patient was apparently in perfect health, there was no foul discharge, and the microscopical evidence was not positive, the reporter was not sure of the diagnosis and asked Dr. Bull to see

the patient in consultation. He believed that the condition was malignant disease of the corpus uteri, and advised extirpation of the uterus. Another fragment of tissue was removed from the interior of the uterus, and was submitted to the pathologist. After a careful examination he was unable to find microscopical evidences of malignant disease.

The operation was somewhat complicated, and occupied nearly an hour. Not only was the uterus retroflexed and firmly adherent, but its wall was so softened that the utero-tractor, though introduced to the fundus, tore out several times. There was an enormous cystocele, which rendered it difficult to separate the bladder and to keep it up out of the way. In drawing down the fundus with a vulsellum, the wall was perforated, and a quantity of soft, brain-like material oozed through the opening into the peritoneal cavity; it was thoroughly sponged out. The adnexa were also removed with some difficulty. The broad ligaments were secured with compression forceps, which were removed at the end of thirty-six hours. The patient made a good recovery, and after cicatrization was complete her cystocele was found to be almost cured.

The case was of interest from the standpoint of diagnosis. Here was a patient with slight, irregular hemorrhages (appearing *after the menopause had been fully established*), no foul discharge, little if any pain, and in appearance the picture of health. Several suspicious fragments were removed from the uterus by the curette, and were examined microscopically without positive results. A competent pathologist reported that the fragment sent to him was simply granulation tissue; he had received a portion that was undergoing ulceration. In spite of the negative evidence, the body of the uterus was found at the operation to be so extensively diseased that the wall would soon have been perforated.

The reporter added that epithelioma limited to the body of the uterus was comparatively rare, Gusserow having collected up to 1878 only eighty cases, while Schröder states that it occurs in less than two per cent of the cases of malignant disease of the uterus. Doubtless the diagnosis is frequently made erroneously. Sloughing intra-uterine polypus and fungous endometritis were the conditions most likely to be mistaken for malignant disease of the corporeal endometrium, but both were accompanied by menorrhagia rather than by constant, irregular hemorrhages, and the latter was an affection confined to the period of sexual maturity. Irregular, "atypical" hemorrhages or sero-sanious discharges, occurring several years after the establishment of the menopause, were the distinguishing mark of malignant disease, even when other symptoms were absent. Still, the reporter had in several instances been obliged to keep patients over 40 under observation for some time, and to repeatedly examine scrapings from the uterus, before he could feel sure that they did not have cancer of the body of the organ. As to the so-called "cachexia" which is invariably mentioned in the text-books as characteristic of advanced malignant disease, he had come to believe that it was quite as frequently absent as it was present, since he had repeatedly seen, as in the case reported, patients in apparently robust health, with all their functions perfect, who had but a few months of life.

DR. W. GILL WYLIE.—I think the percentage of cases of cancer of the

body of the uterus given by Dr. Coe is entirely too small. According to my own experience, I would place it nearer ten per cent. One reason why it has been placed much lower is the probable fact that many cases have not been diagnosed. Out of six or seven cases in which I have done hysterectomy for cancer this year, two were cases of cancer of the body of the uterus. With regard to the microscopical examination, I may say that practically I consider it worth hardly anything. With regard to the use of the curette, I think that where the uterus is firm there is no more danger attending the steel instrument than the other. It has the advantage of leaving a smooth surface and not macerating the tissues. I have sent the material scraped away by the curette to as many as three pathologists for microscopical examination in some cases of cancer of the body of the uterus, yet all were unable to make a diagnosis. They could simply say that it was doubtful. Now, when a woman comes to me with a history of flowing two or three years, especially if it is five or six years after the menopause, and the flowing cannot be readily accounted for in any other way, I am prepared almost to take it for granted that she has cancer, if not of the cervix, then of the body of the uterus. In two cases within about a year, I curetted the uterus on three occasions; microscopical examinations were made with more or less negative results; then, taking the history as a guide, I performed hysterectomy, and in both cancer of the body of the uterus was found. Since we have learned to recognize these cases, we will have more of them than formerly. Some of the patients have only a little watery discharge, with admixture of some blood, continuing perhaps two, three, or even five years, until the body of the organ has become largely involved, while the internal os is nearly closed and the cervix apparently normal.

With regard to the use of the forceps, I think it makes little difference how one stops hemorrhage. I prefer the ligature, however, simply for the reason that thus far I have not lost a case of vaginal hysterectomy and have used the ligature altogether, excepting in one or two instances where it was more convenient to employ the forceps. I put on a temporary ligature, and, after cutting the uterus entirely away, I retie the stump. All the retraction which is likely having taken place before the application of the second ligature, there is no danger of hemorrhage. I now regard vaginal hysterectomy as an easy and a safe operation, and the only point is to get the case before the disease has extended too far to contra-indicate the operation.

DR. A. P. DUDLEY asked Dr. Wylie his views as to the relative danger of tetanus after the use of the forceps or of the ligature.

DR. WYLIE said he had had no experience with tetanus in these cases, and could form no opinion. He believed the only danger connected with the means employed for stopping hemorrhage was injury to the ureters. There was more danger of injuring the ureter when the forceps were employed than with the ligature.

DR. H. J. BOLDT.—As bearing on the difficulty of making a diagnosis of cancer of the uterus from the microscopical appearances, I may be permitted to cite a case sent me a year ago. Several scrapings had been made and the diagnosis of cancer given. The history was typical. I proposed a radical operation, but the patient went to another physician, who made a diagnosis of fungosities of the endometrium. She was curetted several times. Last fall she was sent to me again by the attending physician. Another scraping convinced me of the correctness of my previous diagnosis, and the subsequent course of the case showed it to be cancer of the body. In that case the disease remained in the body and in no way involved the cervix, unless it did so during the last month or six weeks of life, during which period she was not examined. There was no metastasis until the last two or three months. I can readily agree with what has been said regarding the difficulty of diagnosis in these cases.

I would ask Dr. Wylie whether he does not sometimes find it extremely difficult to ligate the vessels the second time after the use of a temporary ligature. It seems to me it would be easier to put on a firm ligature to begin with, or to use a clamp.

DR. WYLIE.—I would say at once, in reply to Dr. Boldt, that it is easier to do as he says, but the results are not so good; and it is the results that I am after. I do not think any one can put the first ligature on the broad ligament so firmly that, after cutting the attachments of the ligaments, the ligature will not be liable to slip and the patient thus be subjected to great danger of hemorrhage. So strong is my belief in this direction that I would not be willing to tie, then cut the uterus loose and leave it without retying.

DR. BACHE MCE. EMMET.—Dr. Coe has quoted Mr. Tait to the effect that ovarian tumors when allowed to remain have a tendency to develop into malignant disease. Now, we see a great many patients with such ovarian disease without any signs of malignancy. I would ask Dr. Coe whether there are any statistics which show the relative frequency of this transformation of simple ovarian into malignant tumors.

DR. COE said he had referred particularly to those cysts in which the papillomatous growth perforated the walls and spread to the peritoneum; Mr. Tait had laid stress on the point that after removal of such tumors the patient was apt to develop malignant disease of the peritoneum. He had no doubt regarding the malignant character of such cysts.

DR. B. MCE. EMMET said that in a hospital service of years' duration there had been rarely a case of malignant disease of the ovary reported, and it seemed to him the statement made by Dr. Coe was rather a sweeping one. Generally women operated upon for ovarian disease were considered pretty safe thereafter, but if Mr. Tait's views were correct it would be necessary to give a much more guarded prognosis.

DR. COE remarked that from ten to fifteen per cent of the ovarian cysts removed at the Woman's Hospital were clinically and histologically malignant.

DR. B. MCE. EMMET.—Dr. Coe has referred to the infrequency of definite signs in the development of malignant disease of the uterus. It seems to me the diagnostic point made by Dr. Wylie is not a reliable one. I have often seen hemorrhage after the menopause, caused by fungosities.

DR. WYLIE.—Two years afterward?

DR. EMMET.—Yes. I recall the case of a patient sent me several times simply to have the hemorrhage arrested. I have curetted and applied a strong astringent, and she has gone afterward for long periods without trouble. It seems to me emaciation and anemia are much more reliable symptoms.

DR. WYLIE.—I would reply that usually when the case is one of polypoid growths they can be detected at once, or, if of granulations, that one good curetting will practically stop the hemorrhage. If the bleeding return, it is almost a certain sign that the case is one of malignant disease.

According to my observation, the idea entertained by many that a woman will become emaciated because she has cancer is a wrong one. Usually emaciation does not begin until after sepsis has set in. Next to the last case in which I operated was that of a remarkably strong, vigorous woman, whose cancer had begun a year before. She had been treated by some doctor by electricity, etc. When she came to me I curetted the uterus and she remained free from any symptoms for three or four months. The general health was good; she was troubled only by hemorrhage. Microscopical examination was negative. Because of quick return of hemorrhage I diagnosed cancer of the body of the uterus and removed the organ. The cancer was found not to be large, but was typical.

DR. EMMET.—I have also seen a large fat woman without emaciation, even after the bladder had become destroyed by the cancerous disease, which had extended by continuity; but the anemia was constantly progressive.

THE PRESIDENT.—I think there is some truth in the statement that the longer an ovarian cyst remains in the abdomen the more likely will we be to find malignant disease in the immediate neighborhood of the pedicle. Indeed, I am thoroughly convinced of it. In my own experience at the Woman's Hospital, I have had two cases of malignant ovarian disease the past year. One of the patients I operated upon the past week, in whose case the tumor had been tapped twelve times. The cyst was decidedly

papillomatous, the papillomatous growth extending to the peritoneum. I recall several cases in which the patients were unwilling to have the ovarian cyst removed. It was undoubtedly unilocular at first, but afterward proliferating cysts developed, and it became evident, so far as the unaided eye could determine, that it was malignant. I assisted Dr. Bullard in the removal of a tumor at the Post-Graduate Hospital which weighed eighty-five pounds, and in that case the pedicle looked as much like malignant disease as any I have ever seen. It was so suspicious-looking that I advised Dr. B. to fasten the pedicle to the abdominal wound. The patient recovered from the operation and returned home comfortable, but I doubt very much whether she will remain well a year. So I agree with Dr. Coe that the longer these tumors are allowed to remain in the abdominal cavity the more likely are we to have malignant degeneration of the pedicle.

DR. B. McE. EMMET.—Did Dr. Coe state that with regard to the pedicle?

DR. COE.—I referred rather to the malignant degeneration of the papillomatous growths within such cysts.

THE PRESIDENT.—Is it not about the pedicle that we find the adenomatous growth most certainly, when *any* is present?

DR. COE had not found that this was the rule.

THE PRESIDENT.—That is opposed to my experience. An example was that of the last case operated upon at the Post-Graduate Hospital, in which there were a number of little cysts around the pedicle, while the ovarian cyst weighed perhaps sixty pounds.

DR. A. P. DUDLEY.—As confirming the President's remarks, I have seen two cases myself the past year, and the first abdominal section which I ever made was for a tumor of a mixed character. The pelvis was to all appearances perfectly healthy after removal of the tumor, the other ovary and tube were healthy, yet the patient developed malignant disease of the peritoneum and died within five months.

DR. WYLIE.—I think the President is right in saying that the pedicle is often the seat of myxomatous disease. I have often found in operating that one ovarian cyst had burst and papillomatous material had escaped into the peritoneum, while the others remained intact. In such cases, had the operation been done earlier, the cyst might not have burst, the peritoneum in that event would not have been infected, and life would have been saved.

FIBROID TUMOR OF THE UTERUS.

DR. H. J. BOLDT.—I have some specimens to present, the first being one of fibroid tumor of the uterus which necessitated hysterectomy. I had previously made abdominal section, but, finding it apparently impossible to remove the fibroid, I passed a ligature around the ovarian artery on either side and closed the abdomen—a procedure which I had seen Noeggerath use in one instance with good subsequent result. The result was temporarily very good, but the hemorrhages returned in the course of a few weeks, the patient began to emaciate very rapidly, complained of intense pain due to pressure, was unable to be about; so I finally decided to operate again, and removed the tumor and uterus *en masse*. There was a polypus extending into the uterus. The stump was treated intraperitoneal. The patient made a good recovery. The second specimen is one of

OVARIAN DISEASE, PROBABLY MALIGNANT.

removed by operation yesterday in the case of a woman, 54 years of age, who had emaciated much the past year, and complained of great pain in the abdomen. A tumor, irregular in outline, extended above the umbilicus. It was evident before the operation that there were intestinal adhesions on the surface of the tumor, and that there was close connection with the

uterus. The probabilities were that malignant disease had developed in the walls of the growth, or that suppuration had taken place. The operation itself was one of the most difficult that can be imagined. The walls of the tumor were so friable that the moment they were touched they tore, the pus escaping partly into the abdomen; the adhesions were very dense, necessitating dissection partly by the sharp edge of the scalpel, partly by the handle. The retroperitoneal glands were much enlarged and I removed as many as possible. Macroscopically the tumor seemed to be malignant; it has not yet been examined under the microscope. It was so closely adherent to the uterus that it was impossible to make a pedicle. Hemorrhage was prevented by two rows of running catgut sutures. The patient was expected to die on the operating table, but is doing well.

DR. G. M. EDEBOHLS (*present by invitation*).—Having, through the kindness of Dr. Boldt, enjoyed the privilege of witnessing the last operation, I should like in the first place to bear testimony to the extreme difficulty of the operation; second, to call attention to the fact, which I think is occasionally noticed, that a tumor apparently occupying one side of the pelvis springs from the other. In this case the tumor distended the right side of the abdomen to a considerably greater degree than the left, and seemed to spring from that side, whereas at the operation it was found to be connected with the left ovary. The bladder was pushed to the extreme right as far, evidently, as its own attachments would permit. At the operation it was found not to be attached to the abdominal walls, nor to any part of the parietal peritoneum, but to the tumor alone. These attachments must have formed at an early period in the growth of the tumor, which carried the bladder with it, for when the adhesions were freed the bladder returned at once to its central position in the body. Another practical point connected with the operation was the friability of the growth, to which Dr. Boldt has alluded. The walls were so friable that they ruptured at different places during the course of the operation. To prevent the foul contents from entering the peritoneal cavity, Dr. Boldt at once turned the patient on her side. At that period the adhesions had been loosened anteriorly, but posteriorly no progress had been made. I think I could notice, after the patient had been turned on her side, and while the fluid was running out of the tumor, that Dr. Boldt could make much better headway in dissecting away the adhesions of the tumor; so that the question arises whether, in some cases in which it is difficult to get at the posterior adhesions, it is not better to turn the patient on her side, let the tumor hang out of the abdomen, and in that way loosen those adhesions. In that position the light might be better in some cases. I also had the pleasure of witnessing the operation in the first case related by Dr. Boldt. At the first attempt it seemed impossible to complete the operation, and the doctor desisted from further procedure; but subsequently, yielding to the patient's importunities, he tried again, after fully placing before her the risks, and the result was highly satisfactory. It shows that in some instances the operator is justified in taking greater risks than he otherwise would be, by following the patient's imperative demand.

NEW METHODS OF TREATING THE PEDICLE IN SUPRAPUBIC HYSTERECTOMY FOR UTERINE FIBROIDS AND PROCIDENTIA.

DR. W. M. POLK.—I have here two fibroid tumors of the uterus which may be of interest in connection with the subject of dispensing with the clamp, rubber ligature, and pins in operations on these cases, substituting therefor the method of stitching the stump or sac to the abdominal wall in some, while in others the whole mass is enucleated. One of the specimens presented was removed in January, the other in February. In both cases, in

removing the uterus with the tumor, I first tied the ovarian arteries, then the round ligaments together with the remainder of the broad ligaments. Long-jawed clamps were next placed on the broad ligaments from cornua to cervix, and both were severed just outside the forceps. Raising the mass, a rubber ligature was thrown about it as low down as possible; this proved to be below the level of the internal os in both cases. The clamps being removed, I next enucleated the tumor or uterus down to the rubber ligature, pressing this ligature still lower in the manipulation in order to encroach as much as possible upon the cervical tissue. At the sides of the uterus the enucleation was so conducted as to separate the trunks of the lateral vessels from the mass. This involved decided encroachment upon the uterine tissue in those regions, so that the sac which was thus created was thicker at the sides than at other points. The enucleation was commenced about three inches above the utero-vesical pouch.

Upon its completion the uterine mass in each case was raised as far as possible, and turned first to one side and then to the other, in order that I might ligate the lateral vessels *en masse*. This was done by passing a silk ligature, one to each side, from within outward below the rubber ligature. In this manner I succeeded in getting below all offshoots of the lateral vessels which had been torn in the enucleation.

The amputation was then made at the level of the ligatures inside the sac. No bleeding of consequence occurred; had it done so, hemostatic forceps and two or three ligatures would have controlled it. The sac was then stitched to the lower angle of the abdominal wound, trimmed down, and its cavity loosely packed with iodoform gauze, the end of which was brought out to contact with the surface dressing. Both cases made a good recovery, free from the disturbances usually met with in the extraperitoneal method now in vogue. The first case was well enough to leave the hospital at the end of a month; the second, owing to very thick and fat walls, was delayed until the close of the fifth week, the process of granulation in the wound being slow.

Prof. Lewis Stimson has been experimenting in this same direction, with most excellent results. He, however, pursues a somewhat different plan; for instance, after treating the broad ligaments in the main as I have described, he ligates the uterine arteries before they reach the cervix, isolating them for that purpose in order that he may avoid the possibility of injuring the ureters. He then begins the enucleation an inch or two above the utero-vesical pouch, and carries it through into the vagina, thus extirpating the entire organ, cervix as well as body. The few bleeding points which may be left are readily caught inside the sac and can be controlled by ligatures. He then drops the vagina, which is about all that is left of the pedicle, passing a rubber drainage tube through it to the vulva, and closes the abdominal wound.

I here show you a uterus removed upon this plan, in a case of aggravated puerperia. You can see how complete the process is. The case made an uninterrupted recovery. There have now been six or seven cases operated upon in this way in New York, and all the patients have done well. It would seem, therefore, that the method is about as free from danger as any, while the freedom from distress and the sequences of the present methods will commend it to all.

DR. BUCKMASTER.—One great danger from operations on the uterus pertains to sepsis, and it seems very evident that this is likely to take place from the cervical canal unless due precautions are taken, for in it, even in the healthy state, are numerous spores capable of setting up most malignant septic action. Any procedure which will free us from this danger will be a great gain in these cases.

DR. H. C. COE, on learning from Dr. Polk that he had removed the entire cervix in his case as by vaginal hysterectomy, said that he was once tempted to do the same thing in the case of a uterine tumor with a small pedicle, and saw no reason why it could not have been done. He tied the arteries in the broad ligaments and then removed the tumor, which left plenty of room to work in the pelvis. If the patient had not been so weak, he would have removed the stump also.

DR. POLK remarked that the only change involved would have been the placing of a rubber ligature before tying the uterine vessel. He had pursued that course in one of his former cases, but generally it was better to avoid retracing one's steps. Of course, in the case spoken of, it was a gain to throw a temporary ligature below the mass, get rid of it, and ligate from below.

DR. BOLDT.—I had the pleasure of being present at Dr. Polk's operation for removal of the uterus in procidentia, and was very much gratified to observe with what nicety the procedure could be carried out. One fact which impressed itself upon my mind was the difference in the mortality of this operation for such cases and the mortality of the same operation for cancer. Now, the mortality of extirpation of the whole uterus by Freund's operation is very great. I have done it twice myself, and lost both cases, and I do not intend to try it again. I would ask Dr. Polk whether he can offer any explanation for this difference in mortality in the two operations.

DR. POLK.—The operation which Dr. Boldt witnessed occupied about an hour and ten minutes, which was, so far as time is concerned, a pretty fair test of the vitality of the patient. To come directly to Dr. Boldt's question, however—first, in all cases of cancer shock is likely to largely influence the results of any operation; second, it was shown in a paper published a number of years ago that patients with cancer did much worse under the influence of ether than did others. Then I believe had Freund done his operation five years later he would have had better results. I believe he wasted a good deal of time in applying his ligature, and I do not believe that he got rid of the septic matter in the vagina—a thing which it is very difficult to do in carcinoma. Septic infection, in short, was the cause of the great mortality in his cases.

DR. A. P. DUDLEY.—I would say that the description of the operation given by Dr. Polk to-night is similar to that which I gave for suprapubic hysterectomy at the meeting when Dr. Skene read his paper. The method which I described did not seem to be well understood at the time, but Dr. Polk has made it much plainer to-night. The only difference is that Dr. Stimson's method goes a little farther. I did not take out the lower portion of the cervix, did not ligate the uterine artery, and I employed catgut throughout the entire operation. I covered the stump over by stitching the peritoneum across from one broad ligament to the other, thus leaving it extraperitoneal. I understand Dr. Polk left the peritoneum open. I think there is danger in leaving a large stump in the abdomen. Bantock's results are no better, I think, than could be obtained from an operation like mine. For my part, I believe in closing the peritoneum.

DR. POLK.—I do not want to misunderstand Dr. Dudley, and do not wish him to misunderstand me. Therefore I would add that the method which I have described in case of the two fibromata is exactly the same as that which I described when Dr. Mundé presented a case a year or more ago, since which time Dr. Dudley has done an operation very much like it. He cut the cervix off lower than I did—so low that it could be dilated subsequently for drainage—and sewed the peritoneum over it. The case of procidentia differed from his method in the points he has named.

DR. DUDLEY.—Yes, to put the ligature around the pedicle in such a manner as not to leave it in the abdomen.

DR. POLK.—In conclusion I would say that, in removing these tumors which have become impacted in the pelvis, there is likely to be such hemorrhage as to lead us to suppose that it comes from some important vessel which has assumed an unusual site. But, as a matter of fact, such bleeding is more than likely to be from anastomosis between the vessels of the tumor and the well-defined ones on the pelvic wall, and will generally disappear without active interference. As a rule, the only bleeding to which we need give decided heed is that which comes from the pedicle, and on ligating the uterine artery that will cease.

DR. BOLDT.—I would ask Dr. Polk one more question. If I mistake not, the stump or pedicle in his case was attached to the abdominal wall, was it not?

DR. POLK.—In the case of prolapsus of the uterus I attached the vagina to the abdominal wall, fearing to drop it; but that was simply a departure from the procedure to meet a special indication, namely, prolapsus not merely of the vagina but also of the bladder. I wished to hold up the bladder.

THE PRESIDENT.—This subject is a very important one and cannot be considered too carefully. I witnessed one operation by Dr. Stimson, at which Dr. Polk and several other gentlemen were also present. I was particularly struck with his way of operating. First he stood upon one side of the patient, then upon the other; and instead of asking his assistant to put his hand into the vagina, he used his own left hand. Thus he quickly detected the artery, removed his hand from the vagina, dipped it into a solution of bichloride, and ligated the artery as readily as one would ligate a superficial artery of the body. But there was one step in the operation which he did not do as Dr. Polk has suggested, and consequently it required about ten minutes longer to perform the operation. That is, he did not ligate the ovarian arteries and sever the broad ligaments until after he had ligated the uterine artery. If he had done the opposite, he could have drawn up the uterus. When we remember the location of the ureters, and the necessity for ligating the uterine arteries a little distance from the cervix to escape the ureters, we can work more boldly and successfully with forceps and ligate the uterine arteries quickly and easily. I believe that a year from now we will be able to do suprapubic hysterectomy, even where the uterus is small, with quite as excellent results as we do vaginal hysterectomy to-day. I am impatiently waiting for a good case for this operation.

DR. WYLIE.—I have not had much experience in this direction. Having succeeded so well with the stump outside, I did not like to make a change, but in the first modified Freund's operation which I tried I adopted a procedure which I think would be useful in the operation described by Dr. Polk. I attached a cork to the end of a curved stick, so that one of my assistants could lift the whole uterus high up. Without it the patient would have bled to death on the operating table. I cut the uterus off very low. When about to drop the stump back, I looked at it again and found both uterine and other arteries bleeding. My assistant simply pushed the cork down, checked the hemorrhage to a degree, and I soon had the arteries secured. I think that device for lifting up the cervix and getting it into a favorable position would be of service when trying to get at the stump.

DR. DUDLEY.—If I may be permitted to repeat, I would say that the point which I wished to emphasize was that in my operation the ligatures are outside of the peritoneal cavity. The first case which I operated upon in that manner took place in San Francisco in 1884. I did not have an opportunity to repeat it until in a case operated upon in St. Elizabeth's Hospital. Nothing but catgut is used; none of the sutures are in the abdominal cavity; drainage takes place through the cervix and vagina.

DR. POLK.—I saw Dr. Wylie's operation, and thought of the method of which he has spoken in connection with my case of complete extirpation, but it seemed to me the important feature was to mark out the utero-vaginal

junction, and that it was necessary to have the guidance of the assistant's finger to do that easily. The cork would not answer.

In connection with the case of procidentia, Dr. A. JACOBUS asked Dr. Polk what objection there was to closing the wound in the vagina, since there was no particular need of drainage below.

Dr. POLK replied that there was no objection whatever. It was simply a question of time. To close the wound would be an easy thing to do. It might be done, as has been suggested, after a Porro operation, by inverting the vaginal stump.

Dr. W. M. POLK then read a paper entitled

THE TREATMENT OF ENDOMETRITIS BY DRAINAGE, ETC.¹

Dr. WYLIE.—I will simply add that I believe the same treatment could often be carried out in acute endometritis, but I have found in practice that it is a very uncertain thing to do. I have many times been tempted, for instance, in cases of acute gonorrheal endometritis, to dilate the cervix and drain the uterus; but it is often very difficult to differentiate a simple acute endometritis from an endometritis which has extended and involved the muscular tissue of the womb, and perhaps set up a local peritonitis, for there are some cases in which the inflammation, instead of involving the peritoneum by passing up the tubes, seems to take a more direct course, passes from the endometrium to the muscular tissue, and goes on from a metritis to a local peritonitis. If, then, Dr. Polk means to carry out his treatment in acute cases, it should be in selected ones. In other words, I do not think we should recommend the treatment in a general way in acute endometritis, for it is impossible always to define the local inflammation. If the deeper tissues of the uterus and the peritoneum had become involved, to dilate the canal might enhance the inflammation and lead to a fatal issue; whereas if nature had been given time to hedge off the inflammation, or to convert it from an acute to a subacute or chronic form, the course suggested by Dr. Polk would often effect a cure.

With regard to dividing the cervix, I think I can take exactly the cases spoken of by the author and cure nine out of ten without cutting; that I can dilate, put in a plug, and get quite as good results, without taking the risk of injuring the bladder or peritoneum, or of subjecting my patient to any such formidable operation. I should certainly recommend drainage in chronic and subacute endometritis, but I should emphasize the need of great care in employing it in acute cases.

Dr. H. C. COE.—Before the discussion goes further I would mention one point on which I take issue with Dr. Polk. In applying any new method of treatment we should be sure about the anatomy of the parts. I showed some specimens here last fall in which the endometritis following minor operations on the cervix had been so very acute that it extended in a few hours to the tubes and peritoneum; there would have been no time to carry out the treatment described by Dr. Polk, even had it been thought justifiable. It is impossible in such cases to tell just when the disease has extended from the uterus to the adnexa and peritoneum, and any manipulation of the uterus under the latter circumstances would do more harm than good. When we come to the subject of endometritis during the puerperium, it is different, for then the disease remains localized for some time, while in the variety just mentioned it extends from the uterus to the peritoneum within a few hours.

Dr. B. McE. EMMET.—I think no one will take exception to the remarks of Dr. Polk nor to those of Dr. Wylie, so far as they apply to the treatment of chronic endometritis, for drainage is eminently proper in those cases, inasmuch as through it we secure cleanliness of the uterine canal. But in acute endometritis it is very seldom, as Dr. Coe has said, that the diagnosis is made before surrounding parts are involved. I have not seen a case in which I could say absolutely that it was one of acute endometritis without

¹ See original article, page 1.

any other complication. We are not likely to see them unless they be traumatic or septic, due to specific poison; and I believe it would be a violation of what was proper to take an acute case and subject it to so heroic treatment, especially in view of the success which we have heretofore had from that form of treatment which secures rest and quiet of the inflamed parts. How can we undertake the manipulation of the uterus, necessary in carrying out the treatment suggested, without feeling that we are subjecting the patient to much greater danger? I can conceive that drainage, if it could be instituted without violence, would be of benefit; but to subject the patient to a surgical operation I consider quite uncalled for. Add thereto the other fact just mentioned, that it is almost impossible to say when the disease has not yet involved other parts, and I think it will become evident that such treatment should not receive the indorsement of this Society.

DR. GOLET.—The question involved in this treatment is, whether in acute endometritis the uterus will, in the first place, tolerate divulsion, and, in the second place, will it tolerate the continued presence of a foreign body? I have found that sometimes it will not tolerate a foreign body, such as cotton or gauze, even in the chronic form of the disease. I have condemned divulsion and incision in chronic endometritis for the same reason, and now depend upon moderate dilatation, by means of which drainage can be established. Then the question of whether draining and packing gauze around the uterus may not lead to infection, and cause trouble in drawing the urine, is a serious one. It would be impossible for the dressing to remain aseptic and yet have the urine pass over it.

DR. DUDLEY.—I think the question of treatment raised by Dr. Polk is a very important one. In five cases of chronic endometritis in which I dilated the cervix very carefully with Wylie's dilator, washed out with a bichloride solution 1:3,000, packed with iodoform gauze well up to the fundus, every one of the patients complained so greatly of pain that I was frightened. One declared that, rather than have the treatment repeated, she would die. I removed the gauze immediately after the patients returned. The discharge had increased somewhat; it may be because the gauze had not remained in long enough. I think there may be cases, similar to the one related by Dr. Polk, in which the treatment would be beneficial.

In this connection I might mention a case in which the President assisted me in operating very recently, one in which miscarriage had taken place the 30th of April. I had been asked to see the patient in consultation, and word was sent by her doctor to come prepared to curette. The woman had bled the night before. I found the uterus quite tender. I have some fear in the use of the curette after miscarriage, having seen two cases in which the uterus was perforated. In this case I carefully dilated the cervix, introduced Dr. Emmet's fenestrated forceps, passed them once around each side of the uterus, brought away some tissue which looked like pieces of the after-birth, then passed the forceps toward the fundus, and it seemed they went in further than they should in a uterus from which abortion had taken place. On withdrawing them, with what I supposed to be a piece of the placenta, I was surprised to find on examination that I had pulled the small intestine down through the cervix. It is needless to say that I put it back as quickly as possible. I then packed the uterus carefully with iodoform gauze, and the patient is now convalescent. But during the time the gauze was in the uterus the pain was very severe, and the patient had to be kept under the influence of morphine injected hypodermatically. I withdrew the gauze at the end of twelve hours. Some discharge came away with it. The pain was at once relieved, and the patient required no morphine subsequently. In such a case as that I consider the use of iodoform gauze as good treatment. At any rate, I will stand up for a drain which has carried me through with a critical case. Yet in the five cases spoken of the use of the drain caused great pain, and each patient declared she would not submit to its use again.

DR. BOLDT.—The subject of the paper being limited to acute puerperal and non-puerperal endometritis, the discussion of chronic endometritis is out of place. I would say, then, with regard to drainage in acute endometritis,

that it seems to me nothing could be more desirable than its employment by iodoform gauze. As to pain, I do not think the gauze is responsible for that, but rather too tight packing of the uterus. I have used the gauze drain in chronic endometritis time and again, and have not had patients complain of pain as did Dr. Dudley's. In acute endometritis I have not had much experience with packing, but I think there can be no question of its being the treatment par excellence. The gauze is the best method of drainage. The groove in Dr. Wylie's plug is not sufficient, I think, to give exit to all the matter which accumulates in the cavity of the uterus. That, at least, is my impression of it.

Some remarks have been made with regard to contamination of the vaginal packing with urine. As I understand the treatment, it is not proposed to pack the vagina, simply the uterine cavity, allowing the gauze to protrude slightly from the cervix, and put a pad in front of the vulva. In that way no urine can come in contact with the gauze packing. In all the cases in which I have seen packing employed, the patients have been well able to bear it. Whether they are able to bear a surgical procedure in acute cases I am unable to say; I have had no experience in that direction.

If I may say a word with regard to chronic endometritis, I would remark that sight should not be lost of the great benefit to be derived from some intra-uterine applications, such as iodine and chloride of zinc. Dr. Wylie spoke of gonorrheal endometritis and drainage. Now, I do not know how one can cure a case of gonorrheal endometritis by drainage alone, for there is a specific poison, which has caused the inflammation, that must be destroyed before a cure can be effected.

DR. WYLIE interjected that he did not claim to have cured gonorrheal endometritis by drainage alone.

DR. E. H. GRANDIN.—I am sorry the time allowed for this discussion is so short, for I think it could be continued with advantage. My experience with acute endometritis, aside from that in the puerperal state, has been so limited that I will not speak of the treatment in those cases. I feel, however, that something ought to be said about packing the puerperal uterus with iodoform gauze. I am opposed to it, for two reasons. In the first place, I do not think it is necessary. I think we can accomplish what we aim at without putting iodoform gauze or any foreign body into the puerperal uterus. In the second place, I think that the introduction of iodoform gauze, or any foreign body, is opposed to what we ought to aim at in the puerperal state. My experience has been that in septic puerperal endometritis, if we thoroughly empty the uterus, remove the degenerated placenta, and, if necessary, take away the entire degenerated mucous membrane by the curette, and wash out the cavity once thoroughly, the uterus will then contract; and it is contraction which we aim at in the puerperal state. The cervical canal in these cases is well open, and there is no need of putting gauze or anything else into the uterus to secure drainage. I have seen a good many cases, and have never been afraid to explore the puerperal uterus in case of septic endometritis. Having curetted the cavity and washed it out, I have never been afraid to curette and wash out again if once was not sufficient.

Another reason why I object to iodoform gauze in the puerperal state is that we do not want to put any substance inside the uterus or vagina which smells. We wish, as I stated here some time ago, to be able to detect the smell which is peculiar to the discharges when the endometrium has begun to decompose. It should not be disguised by iodoform. If it should become necessary to use the curette a second time or to wash out the cavity again, the fact will be often revealed sooner by the odor than by any other symptom; but if we introduce iodoform we will smell that and not the fetor.

DR. GEORGE T. HARRISON.—I must confess that I have always regarded the uterus whose endometrium was in a state of acute inflammation with a feeling of anxiety, but I think the treatment recommended by Dr. Polk certainly has a basis of truth. I must also agree with Dr. Coe and Dr. Wylie that the cases in which it is practised must be selected ones. There is one

class of cases of endometritis which I think it is especially called for to treat in that way, that is, the gonorrheal form; for we know that the ravages in these cases are so dreadful that if it is possible for us to prevent the spread of the inflammation to the tubes and peritoneum by treating the endometrium, it is certainly our paramount duty to do so. While I agree with Dr. Polk as to the need of drainage, I must confess that I am not at one with him in his recommendation of cutting or rapid dilatation. In that respect I rather agree with Dr. Wylie in the use of gradual dilatation, since in this way we can accomplish all that is needed. The truth is that in the vast majority of cases all these methods of dilatation are unnecessary, for whenever it is required to get inside the uterus one will usually find the canal patulous enough.

DR. POLK, in closing the discussion, said: I am very much flattered by the reception which the paper has met with and the able comments which have been made upon it. So many points have been raised that it would be difficult for me to answer them all in so short a space of time as remains, but I will try to summarize the principal objections offered, and answer them.

First, with regard to packing the uterus, some of the speakers seem to have been misled on that point. The idea is not to distend the cavity of the uterus at all; it is simply to put some gauze into it as far up as the fundus, extending out of the vagina to the vulva, simply to establish drainage. The practice is precisely that which is adopted in carrying a piece of iodoform gauze down into the pelvis in ovariectomy. I claim that the method will do just as much for the interior of the uterus as it will do for the interior of the pelvis; the principle is exactly the same.

With regard to using iodoform gauze, I did not mean to emphasize what kind of gauze. Any gauze will do, provided it has been sterilized, whether it has iodoform or no iodoform in its meshes. I presume that statement will meet the objection offered by Dr. Grandin.

There is no packing of the vagina; consequently the objection offered that the dressing is likely to become soiled by the urine has no foundation.

With regard to the use of the method in puerperal cases, I am much obliged to Dr. Grandin for his decided expression of opinion, for I know he has had a great deal of experience in these cases; but I must confess to a belief that the method which I have suggested is much safer than trusting alone to washing after the use of the curette, and that the placing of the gauze drain into the interior of the uterus will facilitate the recovery of his patients rather than retard it.

As to the criticisms made by Drs. Wylie, Harrison, and Emmet upon the use of the incision, I think they misunderstood its application. It is recommended simply in those cases which resist divulsion, no matter how thoroughly the divulsion may be carried out. I think Dr. Harrison's suggestion is quite correct—namely, that in ordinary cases of acute endometritis no such difficulty would arise. I believe I stated in my paper that the incision was called for in chronic cases more than in acute, and in suggesting it I had in mind cases of chronic endometritis with fungous degeneration and hemorrhage—cases in which there is frequently a tight internal os, and in which divulsion does not answer the purpose. Dilatation will answer in nearly all cases, especially in those of an acute nature.

Dr. Emmet has spoken of the measure as being radical, dangerous, and bold. Well, I agree with the doctor that it is bold. He said further that we have, in measures already in vogue, a means of meeting the difficulties for which this treatment has been proposed. Now, there is just the point which has led me to go boldly into the uterus which is acutely inflamed, and seek to establish drainage. Perhaps no other person in this room is better able than Dr. Emmet to judge of the inefficiency of the present modes of treatment in these cases; that through them we do not give a sufficient amount of relief; that, in spite of them, we do have salpingitis following endometritis; and that, in consequence of salpingitis, we read of operations upon the uterine appendages being done all over the country. I feel that, in the face of the necessity of resorting so often to extirpation of the uterine appendages, which the inefficiency of the old measures of treatment has

forced upon us, we are in urgent need of some better method of treatment. In view of the fact, I would repeat that hundreds of women all over this land have to submit to removal of their tubes and ovaries because of an inflammation which present methods of treatment are not able to check while it yet remains limited to the endometrium. I feel that it is the imperative duty of every member of the Society to take a bold stand and seek to free the profession from this opprobrium.

I do not suppose that Dr. Wylie's paper was intended as a reply to mine, but I may be permitted to state again, in order that I may not be misunderstood, that I insert the iodoform gauze simply to establish capillary drainage, which can be done anywhere in the body, the interior of the uterus constituting no exception to the rule. With regard to the superiority of Dr. Wylie's plug over the gauze, that, of course, is only a matter of opinion and of experiment. I am sure that, if it became evident that Dr. Wylie's plug was superior to the gauze, there is no one who would cry it from the housetops sooner than I; for what I am seeking is simply some efficient method of draining the cavity of the uterus, find it where we may. All I can say about the plug is that, through the able presentation of my colleague, in the past seven years it has been employed by every gynecologist of this city, and we have not yet good drainage of the uterus.

DR. WYLIE.—The plug has been used only in sterility, not for drainage.

DR. POLK.—I understood you to emphasize the point that you had used it to obtain drainage.

DR. WYLIE.—I have used it for drainage, but the general profession has not.

DR. POLK.—Oh! the profession has not used it for drainage? Well, it may not try gauze either, but I hope it will. As to the incision, it is very different from that upon the posterior lip advocated by Dr. Sims, and is suggested for a different purpose.

Stated Meeting, October 1st, 1889.

The President, DR. H. T. HANKS, in the Chair.

HYSTERECTOMY AND RESECTION OF THE VAGINA FOR INCURABLE PROCIDENTIA.

DR. H. C. COE.—I had expected to present another specimen in addition to the one now in my hands, but it was lost. Both specimens were uteri removed per vaginam, and in the case of the one which was lost there was a great deal of interest on account of the necessity of doing a secondary laparotomy in order to overcome intestinal adhesions; but I shall report that case subsequently.

In the case of the patient from whom the present specimen was obtained, an operation somewhat different from ordinary vaginal extirpation was performed. It consisted in removal of the uterus, with resection of the redundant portion of the vagina, for obstinate procidentia. The patient had been the rounds of prominent gynecologists, and had submitted to six or seven different operations for the relief of prolapsus; finally amputation of the cervix was performed, but that also failed to cure the trouble.

She was about 37 years of age, and menstruated regularly; but as her life was rendered miserable by the procidentia, and she had been in no wise relieved by the several operations, it seemed to me that the case was one in which a radical procedure was justifiable. I had recently been reading an article by Asch (*Archiv für Gynäkologie*, Bd. xxv., Heft. 2), in which he describes this method of dealing with long-standing prolapsus, and it

occurred to me that this was an eminently suitable case. It seemed as if the operation would prove much simpler than ordinary vaginal hysterectomy, but I found it more difficult. It is true that the uterus was quite accessible, but the hemorrhage was excessive. It took place from both ends of the cut vessels, the latter being generally dilated; the uterus (minus the cervix) was large, and the vagina had been narrowed by previous operations. Thus the operation proved to be anything but simple, and required more than an hour for its performance.

The steps were as follows: The uterus was drawn upward, and a V-shaped incision was made in the posterior vaginal wall at the junction of its middle and lower thirds, the lower third being excised with the uterus; then the posterior cul-de-sac was opened, and the peritoneum was stitched to the edge of the vagina. According to the original directions, the uterus should then have been retroverted, and the bladder separated from above (*i.e.*, from the peritoneal side), but I found this impossible. After resecting a considerable portion of the anterior vaginal wall as before, I detached it in front as high as the peritoneum, which was incised and should also have been sutured to the edge of the vaginal wound; but the hemorrhage from the large, raw surface was so great that it was necessary to tie many vessels, and I did not venture to turn it into the peritoneal cavity, where it would have been inaccessible in case of secondary bleeding. The broad ligaments were ligated in sections and the stumps were sutured to the edges of the vaginal wound on both sides, the latter being partially closed, with the exception of a hole in the centre which was plugged with iodoform gauze. The idea is that when the wound heals the retraction of the peritoneum and stumps will prevent a recurrence of the rectocele and cystocele. As far as I am able to judge up to the present time (six weeks after the operation), it has been successful in this case. After the operation the patient had an attack of acute mania, after which she lapsed into a condition of melancholia, with which she is still afflicted. [It was subsequently necessary to transfer her to an insane asylum.]

This may seem to be a very radical operation for so simple a condition; but when we consider that the woman had had several operations, all performed by the best operators, and that the procidentia still persisted and prevented her from attending to her duties, and that she was anxious to submit to any treatment in order to be cured, it seems to me that this was one of those exceedingly rare cases in which vaginal hysterectomy was indicated.

DR. GRANDIN inquired whether Le Fort's operation had been thought of.

DR. COE replied that it was not, for the woman was married and had not passed the menopause.

DR. GRANDIN thought the objection did not hold. Le Fort's operation did not completely obstruct the vagina. It simply united the posterior to the anterior vaginal wall in the middle line, leaving one side or the other for the menstrual flow and sexual act. He thought that in Dr. Coe's case vaginal hysterectomy was justifiable; but, as a rule, so serious an operation should not be undertaken until Le Fort's had been tried.

DR. COE said that no permanent benefit could be expected from Le Fort's operation in such an aggravated case as the one which he had reported.

DR. GRANDIN mentioned a case in which there had been no return after two years.

DR. BUCKMASTER inquired whether the ovaries were left in Dr. Coe's case.

DR. COE replied that they were removed.

DR. BUCKMASTER.—Cases of melancholia following removal of the ovaries have been found to be very frequent by those who have been able to trace their cases some time after the operation. I believe one gentleman claims that as many as ten per cent become melancholic and suffer from nervous diseases.

DR. COE.—This was a case of acute mania developing immediately after the operation; the melancholia appeared subsequently, but too soon after removal of the ovaries to be attributed to this cause. It was a typical example of the peculiar psychosis which sometimes follows gynecological operations.

DR. DUDLEY.—I think Dr. Coe's case is a very interesting one. I would call attention to one remark which he made that ought, I think, to be borne in mind—namely, the difficulty of performing vaginal hysterectomy for proclivita. One might suppose it to be an easy operation with the uterus out of the vagina, but to my mind it is much more difficult than hysterectomy for carcinoma of the cervix or body. The tissues, and the relations of the bladder and rectum to the uterus, are so changed that it is hard to tell where to make the incisions to avoid wounding the bladder and rectum.

It seems that the uterus presented by Dr. Coe is a very large one to have been operated upon for amputation of the cervix. Undoubtedly it has sufficient weight to produce proclivita in a person with relaxed tissues. I should infer that the operations which had been performed proved of little value, because the uterus had ever remained in a state of subinvolution. It would seem possible that after some plastic operation, as Alexander's, hysterectomy would not have proven necessary.

DR. COE.—The patient had undergone Alexander's operation; besides this, there had been operations on the cervix and perineum, and on the anterior and posterior vaginal walls, and finally amputation of the cervix.

TUBAL PREGNANCY; LAPARATOMY.

THE PRESIDENT.—This specimen consists of the tube and ovary removed in a case of extra-uterine pregnancy. The case was an interesting one to me, because I was not aware that the woman was pregnant when I operated. Her physician in a Western city, who watched her before she came to me, said there was really nothing wrong, excepting perhaps a little perimetritis, and he advised no treatment. The woman, however, had suffered extremely during four weeks prior to consulting me, and was willing to submit to any operation which promised relief. I called on her the day of her arrival, and observed that expression of the face so indicative of profound disturbance of the vital forces, and which means imminent danger ahead. On physical examination I felt a tumor filling a large portion of Douglas' pouch, and up on the right side in region of the right ovary. The pulse was small and rapid, the temperature 100°, and there was a peculiarly pinched expression of the face, which, as I have said, portends danger. I recognized that there was nothing to be done except to open the abdomen, and I expected to have to remove a pyo-salpinx. The patient, however, was in so feeble a condition, and the necessity for an exploratory operation seemed so urgent, that I did not think it advisable to subject her to the annoyance and delay necessary in making a more exact diagnosis to exclude all possibility of a tubal pregnancy or ovarian cyst. At the operation I found the lower portion of the abdominal cavity filled with blood; there was a blood clot, and tissue which had the appearance of chorionic villi, and which you see, in the specimen, in the dilated and ruptured tube on right side. The ovary was cystic, and

was removed with the ruptured tube. The other (the left) tube and ovary were completely covered with exudation, but were enucleated and removed. The microscopist found, on examination of the right tube, a large amount of embryonic and chorionic tissue, which led him to believe it was a case of tubal pregnancy. Of course the fetus was not found, for the history afterward obtained pointed to partial rupture five weeks from the date of conception, whereas the operation was performed seven weeks after conception. The sac when removed was as large as one's fist. The patient made the most uninterruptedly satisfactory recovery of any one ever coming under my care, as she was up and on the street four weeks after the operation.

The case illustrates the fact, which many of us have been thinking over a good deal of late, that we cannot foretell when rupture may take place in tubal pregnancy. If it does not rupture into the abdomen, it may within the tube, so that the bleeding may fill the tube until the final rupture into the abdomen. If the latter, alarming symptoms may not develop for some time, or until the complete rupture occurs. The case further illustrates the fact that when those alarming symptoms do arise we should not lose time in making a diagnosis, or delay many hours before opening the abdomen. I could have learned more of her history, had I asked a few more questions. But I learned enough to know she was dangerously sick, and that the seat of trouble was a tumor near the right ovary.

DR. GRANDIN.—Did the President diagnose rupture, or did he only think rupture had taken place?

THE PRESIDENT.—I confess I did not make a careful differential diagnosis. I was only sure that there was a tumor the size of a goose egg in the region of the right ovary, and a boggy, semi-solid mass in Douglas' pouch. The patient was in no condition to answer questions exactly. I was sure, from the sense of touch and the general expression of the patient, that there was a pyo-salpinx, or a suppurating ovarian cyst, or a tubal pregnancy which was about to rupture, if a partial rupture had not already occurred. There was nothing to do but to operate by laparotomy. This case confirms me in adopting the rule which I laid down in my paper before the American Gynecological Society, viz., if a diagnosis is made, at whatever stage of ectopic pregnancy, and the symptoms are alarming, do a laparotomy at the earliest possible moment consistent with the patient's ability to endure an operation.

DR. GRANDIN.—My question was intended to lead up to another. Knowing the President's preference for electricity early in extra-uterine pregnancy, I was going to ask him why he did not use electricity in this case, if he had made the diagnosis of extra-uterine pregnancy and did not think that the tube had ruptured.

THE PRESIDENT.—I believe in using electricity to destroy the fetus up to ten or twelve weeks, if no alarming symptoms have occurred. Any one of us is justified in doing so; I have done it three times successfully, and my patients are well to-day. But in this patient there was the large tumor, there was intense pain in this region, there was the partial collapse, there was the conviction on the part of the patient that something alarming was about to occur. She had ridden many hundred miles to see me, expecting that I would relieve her. She had grown worse rapidly during her journey to New York. This was not a case for electricity. On opening the abdomen a large dark-colored clot was found in the distended ruptured tube, while a few more recently formed, lighter-colored clots and much fluid blood were loose in Douglas' pouch. The old clot was the shape of the semi-solid tumor which I had discovered before the operation. I believe this had been formed within the tube by rupture of some vessel near the ovum, and that this clot had formed *before* the larger rupture into the abdominal cavity occurred.

DR. JANVRIN.—I would ask the President what he means by rupture into the tube in a case of tubal pregnancy.

THE PRESIDENT.—I mean that with a constantly distending tube the veins may rupture within the tube long before the large rent through the full thickness of the tube wall occurs, and arterial hemorrhage into the abdominal cavity takes place, the same as hemorrhage occurs and a clot is formed around the placental site in uterine pregnancy, the same as hemorrhage occurs into an ovarian cyst.

DR. JANVRIN.—I had never heard that description of rupture into the tube. It may take place as the President has explained it. But I hardly think it is very likely to so occur. As I understood the question, rupture of the sac meant rupture of the tube itself—that is, some portion of the Fallopian tube—so that extravasation took place into the abdominal cavity. The rupture and extravasation might be slight at first. A hemorrhage by drops might go on forming layers of blood clot, distending the tube, and ending in a decided tear which would cause the patient to pass into collapse. In such a case there would, of course, be no question about the propriety of performing abdominal section. The only other form of rupture which I know of is that which quietly works its way into the folds of the broad ligament, which, however, is a conservative process and may enable the patient to go along some time before rupture takes place into the abdominal cavity. Indeed, it may go on to full term. From the President's explanation, I suppose rupture into the tube means *gradual distention of the tube and hemorrhage into the tube*, without rupture through the external muscular and peritoneal coats into the peritoneal cavity; and that the fetus dies in such cases from pressure of the blood clot upon it. I should like to ask what Dr. Coe understands by the term rupture into the tube.

DR. COE.—I had always entertained the same opinion as Dr. Janvrin, that the tube ruptured from distention caused by the growth of the fetus, and that the blood clot found in or on the tube was the result of this rupture. In a very few cases there might be preliminary rupture of small vessels in the walls of the tube, permitting an inconsiderable amount of blood to collect within it. There is not room enough in the unruptured tube for much blood in cases of tubal pregnancy.

DR. JANVRIN.—I should think not, for the distention caused by the growing fetus would soon cause laceration quite through the tube. I have no doubt, however, that the condition described by the President may occur, and, when it does, probably the pressure of even a small blood clot would cause death of the fetus.

THE PRESIDENT.—The theory which I had formed regarding this case was that death of the fetus had taken place from slight rupture about or before the fourth week, and that gradual increase of blood took place within the tube subsequently, a blood clot formed, and eventually the tube itself ruptured. I was pleased to find the results so satisfactory, and I may repeat that it is just in cases of this kind that we should not wait to discuss the use of electricity at all.

DR. GRANDIN.—That is the point which I wished to make, Mr. President. You did not operate for extra-uterine pregnancy, so that there was no question of the use of electricity at all. You operated just as you would in an ordinary case of pyo-salpinx. The case does not indicate a change of mind on your part with regard to the place of electricity in cases of extra-uterine pregnancy.

THE PRESIDENT.—It was a very different case from those in which we have recommended the use of electricity. It was a case of pelvic tumor, with possible rupture and almost certain death if not operated upon.

EXPLORATIVE LAPARATOMY FOR SUPPOSED EXTRA-UTERINE PREGNANCY, SHOWING AN ERROR IN DIAGNOSIS.

DR. H. C. COE related the following case: Last winter I was requested to see a lady in the country who was thought by her physician to have extra-uterine pregnancy. The history certainly lent color to that suspicion.

She had missed two menstrual periods, presenting subjective symptoms of pregnancy. One day she had an attack of violent pain in the abdomen, with evidences of collapse. The doctor, who was a most careful practitioner and was accustomed to exploring the pelvis, found at the right side of the uterus an obscure mass which he thought gradually increased in size from week to week. Although he thought at first that it was a normal pregnancy, the peculiar symptoms and the presence of a bloody discharge from the vagina awakened the suspicion of ectopic gestation. The patient was examined under ether two or three times, and the sound was passed, the uterus being apparently empty. The doctor used first the strong galvanic and then the faradic current, with the view of destroying the fetus if it was in the tube. As a result of the applications the patient had severe uterine colic and more or less shock. The galvanic current produced a large eschar on the abdomen. After this treatment had been continued for two weeks, the patient had an attack of abdominal pain more severe than before.

I saw her at this time. She was pale and exhausted, vomiting nearly everything; her pulse being 120-130, with no elevation of temperature. There was general abdominal tenderness, with considerable tympanites. On examination I found the uterus enlarged, corresponding to about the tenth week of pregnancy, and the cervix soft and patulous. On the right of the uterus was a tumor, not much larger than an English walnut, fixed and non-fluctuating. I passed a sound into the uterus to the depth of three and one-half inches, but could feel nothing, and was inclined to believe that normal pregnancy existed; yet, in view of the history of the case and the enlargement on the right side, the diagnosis of the attendant was regarded as a probable one and a guarded prognosis was given. During the following week she was reported as growing worse and worse, had become very feeble, and her physician feared that peritonitis was developing. Finally she had another attack of pain with apparent collapse. I visited her again, prepared to operate, and found her much weaker than before, with a pulse of 130-140, her abdomen being much distended and tender, especially over the right iliac region. Believing that there was some mystery here which should be cleared up, I proposed an explorative incision, which was gladly acceded to, as the patient and her family were sure that she would die if something was not done. I made a small incision, introduced my finger, and to my great mortification found a normal pregnancy of about three months, the mass on the right side being an enlarged ovary. The patient recovered rapidly after the operation, aborted on the second day, and was ready to sit up as soon as after an ordinary confinement. The pain, vomiting, cardiac irritability—all the unfavorable symptoms subsided so promptly that I came to the conclusion (which was afterward confirmed) that hysteria was the principal factor in the case. I saw the patient a few days ago and found her in excellent condition. She said that she had never been better, although she still had pain in the right side and dysmenorrhea. On examination I felt the same enlarged and tender ovary that had misled me before, although it had become smaller. After a short conversation with the patient it was easy to understand how she had exaggerated her symptoms, especially the uterine colic which resulted from electricity, used, perhaps, "not wisely, but too well."

The case was a most instructive one, since it taught me not to form an

opinion until *all* the evidence has been weighed, and not to allow myself to be biased by the opinions of others, and above all never to forget that the hysterical element may predominate in every obscure case of pelvic trouble. The amount of manipulation which the pregnant uterus will endure without expelling the fetus is often remarkable—a fact which we must always bear in mind in deciding as to the existence of normal pregnancy, a condition which the most accomplished diagnosticians can and do overlook.

DR. BUCKMASTER.—With regard to the amount of current used, the blistering of the surface was not an indication. The method of applying electricity by many is so vague, and they have so little knowledge of what they are going to do, that they tend to bring the method into disrepute. Thus we do not really have a fair chance of learning what electricity will do.

THE PRESIDENT remarked that it looked as though the uterus was a much better place in which to keep the child than the tube.

DR. BUCKMASTER.—Five milliamperes will give an eschar.

DR. GORLET asked whether the electrode used in the vagina was metallic; if it was, it would produce an eschar very easily.

DR. COE supposed that a sound had been used as the intravaginal electrode.

DR. BUCKMASTER said that a complicated apparatus was not necessary. It was merely a question of understanding how to use it.

TUBAL DISEASE WITHOUT PAIN.

DR. RALPH WALDO.—The question has been raised a number of times with regard to the existence of pain about the uterus or genital apparatus in tubal disease. As bearing on this question, I would say that during the past six months I have had under observation a case of double pyo-salpinx attended with nothing but at times a dragging sensation about the uterus, although the patient's general health is very much undermined by the disease. It is so low, indeed, that Dr. Lee, who has seen the patient in consultation, advised postponing an operation. I may add that the patient has suffered from severe mental derangement, being much of the time melancholic, approaching now and then a state of mania. There is a good deal of local tenderness, yet when the patient is about the house or confined to bed there is very little to direct the attention to the genital apparatus. Bloody pus has escaped from both tubes, and it has been thoroughly demonstrated, short of an operation, that the condition is one of pyo-salpinx.

THE PRESIDENT inquired of Dr. Waldo whether he had been able to trace any direct connection between the time of menstrual flow and increased flow of pus and serum, and cephalalgia.

DR. WALDO replied that she had not suffered from severe headaches, but about three or four days following the menstrual flow she had severe nervous derangement, at times hallucinations, and at times a great deal of wakefulness and restlessness, and it was necessary to give opiates. This condition invariably occurred three or four days after the menstrual flow, whereas the escape of bloody pus took place only at irregular intervals; it had occurred as often as twice in one month, while at other times two or three months intervened. He had watched the case very closely, it being one in which laparotomy might be required at very short notice because of rupture. Yet it was apparently an old case, and probably originated in gonorrheal infection from the husband, although the patient had no knowledge of it.

THE PRESIDENT said he had asked the question because he had under observation at present two patients with the objective and subjective symp-

toms of pyo-salpinx, and both had attacks of severe headache, at times coming on three or four days before the menstrual flow, but more frequently three or four days after it. He thought that possibly the pus in the tubes was partly reabsorbed and might thus be the cause of the cephalalgia. He asked the Fellows whether in their experience patients having headache in connection with pyo-salpinx were relieved by escape of pus.

DR. DUDLEY said that during the past year he had had six cases of pyo-salpinx, in each of which the headache was severe, and in each, as far as he had been able to learn, it disappeared after laparotomy. He stated further that he had seen cases of pyo-salpinx with very little subjective pain about the uterus. To mention one in particular, last year a woman entered the Post-Graduate Hospital with a pyo-salpinx immense in size, yet she had been going about her business as a dressmaker, earning good wages. She seemed to give no attention to her condition, except to the presence of a profuse discharge which kept her moist all the time about the vulva. She had been to see two physicians for relief from the discharge, and the diagnosis made by them was that of fibroid tumors upon the uterus. He found on examination that the enlargements were not in the position of fibroids, and, on opening the abdomen, removed the pyo-salpinx. The patient recovered. There was headache in all the cases, which was relieved by the operation. He added that in all the tube was very rotten, and ruptured during the operation.

DR. WALDO said he had been told that earlier in the course of her sufferings his patient had had headache, which she found was relieved only by morphine; it was before she came under his observation, and it was not unlikely that she had pyo-salpinx at that time, for the case seemed to be an old one.

EXSTROPHY OF THE BLADDER.

DR. A. P. DUDLEY.—I had occasion last Sunday to operate on a case of exstrophy of the bladder in a girl 20 years old. She had since a child worn a napkin, and was ever wet. There was no navel, and the exstrophy extended from about where the navel should be to the pubes, covering an area of about five inches. There was a double uterus and double vagina; no vulva. The vaginal outlet looked as though the vulva had been cut off with a sharp knife and the edges had healed, or like the end of a compressed tube. The thinness of the walls of the exstrophy was marked, there being but a layer of mucous membrane above the peritoneum. There was a hernia at the site of the exstrophy, and the linea alba was separated four inches and a half. While in Newport this spring I saw a case of exstrophy of the bladder in a child which had been operated upon by Dr. Richardson, of Boston, and I tried to do the same operation in this case. I made an oval incision through the skin and fascia down to the muscle upon the abdomen, and turned down the flap over the exstrophy. In order to get tissue enough to extend down to the pubic bone, I had to open the abdominal cavity, turn over one-half of the exstrophy, and afterward sew up the abdominal wall. I also dissected up a wing-shaped piece on the thigh to cover a portion of the exstrophy. The skin was turned under, the cellular tissue being above. Other flaps brought up from the thigh were applied over the first in such a way as to leave the cellular tissue surfaces in contact, while the outer surface was composed of skin. The edges of the new wounds were brought together as far as possible by sutures. Only a wing-shaped surface at one angle remained uncovered; that is granulating. I saw the patient this afternoon, and found a temperature of 99.5° F.; no tympanites. The urine was escaping from the lower part of the wound over the pubic bone. Of course a second operation will be necessary in order to make narrower the space below, and, if possible, to form a urethra.

TRANSACTIONS OF THE OBSTETRICAL AND GYNECOLOGICAL SOCIETY OF WASHINGTON.

Stated Meeting, June 7th, 1889.

DR. CHARLES E. HAGNER *in the Chair.*

DR. JOHN T. WINTER read the paper of the evening :

JAUNDICE DURING PREGNANCY.¹

DR. BUSEY had listened with pleasure to the paper. There was much in it to commend and much to which he would except. The theory of affinity between the contents and secretions of the intestine and the bile was new to him, and could not be accepted as an explanation of the jaundice of pregnancy.

Pathologists admit two varieties of jaundice—the hematogenous, due to the accumulation of free blood pigment in the blood; and the hepatogenous form, due to obstruction. Obstetricians admit a rare and simple form in pregnancy, which is probably obstructive, but the more frequent and graver form is ascribed to serious structural changes in the liver, not unlike those which take place in acute yellow atrophy. In the simple or obstructive form the danger is due to disturbance of the renal function due to pressure of the gravid womb, to the weakened heart action resulting from action of the bile acids upon that organ and from the hydremia of pregnancy. The hematogenous variety was always a grave disorder, and especially so when complicating pregnancy. It sometimes prevailed as an epidemic and had been denominated malignant jaundice.

He had recently had an interesting experience in the treatment of a case of obstructive jaundice. On April 30th a lady ate heartily at dinner of cucumbers and caviare, and was soon after seized with a violent pain in the locality of the pylorus and duodenum, which was relieved by hypodermatic injections of morphia. Marked tenderness in the region of pain persisted for several days, followed by the gradual development and persistent increase of jaundice during the four succeeding weeks, notwithstanding a careful dietary and the usual medication. The obstruction of the biliary ducts was complete, and the usual and most approved therapeutics failed in every respect. I then resorted to the method of Krüll, and had administered, morning and evening, rectal injections of a pint of water at a temperature of 60° F. The first stool after the first injection was markedly changed in color, and each successive evacuation showed rapid progress towards recovery. At the present time the patient seems to be well, though the discoloration of the skin and eyes has not entirely disappeared. The injections always occasioned some pain, and could not be retained long, at no time longer than one-half hour. The method had been tried by several German physicians, and the reports were entirely satisfactory.

DR. HARRISON said Dr. Busey had drawn the distinction accurately between the different varieties. He had had an opportunity to study the hematogenous form. In Virginia and North Carolina there is a malarial disease accompanied by chills, and the sufferers soon turn very yellow. The urine is the color of port wine. In these cases, if the urine is subjected to chemical and microscopical examination, no trace of bile nor blood cor-

¹ See original article, page 31

puscles are found; and there is complete hemolysis, granules of pigment and broken corpuscles being found. He had recently examined two specimens from two fatal cases, and this condition was observed in both.

DR. SMITH had seen several excellent articles on this subject; the best being those of Lavoix, in 1872, and that in Charpentier's "Obstetrics." The text-books are very unsatisfactory. Von Scheupel says that "in fecal tumors and in pregnancy the jaundice does not usually last long." Others contend that jaundice of pregnancy should always be looked upon as a grave disorder, although the patients may recover. Of thirty pregnant women, "three were at the time of their seizure in the fourth month, five in the fifth month, six in the sixth month, eight in the seventh month, one in the eighth and ninth months respectively, and six in the tenth month." Spaeth observed one case in the third month.

Among the causes, Pouchet attributes it to compression of the hepatic vessels by the growing uterus. Mennier to compression by the distended colon, and others regard the grave form as identical with acute yellow atrophy of the liver.

Toxemia is due to the presence of bile salts in the blood.

In considering the propriety of inducing premature delivery or abortion for the relief of this condition, the testimony is that the procedure is of no avail. Abortion usually takes place from three to five days after the beginning of the disease, and fails to bring relief; on the contrary, the most serious accidents generally occur subsequently.

The fetus is not discolored, although the liquor amnii may be tinted.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF PHILADELPHIA.

November 7th, 1889.

The President, DR. THEOPHILUS PARVIN, in the Chair.

DR. J. M. BALDY reported a case of

VAGINAL CYST

which had occupied the anterior portion of the anterior vaginal wall. It had prolapsed like a cystocele for years, and had been taken and treated for such. He had enucleated the cyst without much trouble. He called attention to the various theories as to the origin of these cysts, and came to the final conclusion that they arose from the vaginal glands, as retention cysts. Although it was claimed by some that vaginal glands did not exist, yet he thought that the positive evidence in favor of their existence, produced by such men as Dubois, Klek, Veit, Von Preuschen, and others, settled the question in the affirmative. He thought the position of these cysts at times proved conclusively that those individual tumors could not have arisen from the ducts of Gärtner. Where the cysts were small or of moderate size, he preferred to enucleate them, even though this measure had been pronounced difficult and dangerous. He had not found it either one or the other. Accidents may happen in the hands of the clumsy, but not in the hands of a surgeon.

DR. DA COSTA thought the method of enucleation the typical one, but

that there were cases in which this operation was not feasible. He quoted such a case. Sometimes simple incision was sufficient. In others he had cut the top away in an oval-shaped piece, leaving the bottom of the cyst against the anterior vaginal wall. This operation had served him well.

DR. E. E. MONTGOMERY exhibited the specimen of a

SUPRAVAGINAL HYSTERECTOMY.

The tumor had grown for eight years. The patient had never been pregnant. There was no great amount of hemorrhage. The suffering was from the pressure. Incision was five inches. The broad ligaments were grasped in forceps, and cut so as to allow them to retract from the tumor, thus making a good pedicle. Transfixion pins were passed through the stump, and it was secured by a *serre-neud* and fastened in the lower angle of the wound. Irrigation of the abdomen was made, and a drainage tube was introduced. The stump was dusted with iodoform and covered with gauze. The stump came away in a week, and the patient made a good recovery.

DR. JOSEPH PRICE exhibited a

LARGE PUS TUBE AND OVARIAN ABSCESS.

The husband had had gonorrhea. The specimen demonstrated multiple abscess in the pelvis, and the folly of treatment by vaginal puncture. He had seen two other cases of gonorrheal salpingitis in the past seven days.

DR. PRICE also exhibited a

LARGE FIBROID TUMOR OF THE UTERUS REMOVED SUCCESSFULLY BY SUPRAVAGINAL HYSTERECTOMY.

The tumor had been treated three times a week for eleven weeks, by a pupil of Apostoli, with electricity. There was less hemorrhage, but a great increase in watery discharge, together with rapid enlargement of the tumor, increase of pressure symptoms, and rapid decline in general health of the patient. The case was complicated by a small ovarian cyst on the left side.

DR. G. BETTON MASSEY had always seen fibroid tumors, unless cystic, get harder and smaller under the use of electricity. He had always seen lessening of hemorrhage and coincident improvement in health. He was not in favor of puncture, although he had seen some good result from it.

DR. JOSEPH HOFFMAN said that this differential diagnosis of the complications of fibroid tumors (cystic from true fibroids, etc.) was just the trouble. Keith, in his long, successful series, was in the great majority of them uncertain of his diagnosis, and yet the electricians could always make this diagnosis.

DR. J. PRICE said that the appendages should be removed while the tumor was small. The results of this operation were wonderfully good. The deaths following the electrical treatment are as many as those following hysterectomy, and the results are not to be compared. In the one all the symptoms come back; in the other the disease is completely removed.

DR. WM. GOODELL read the history of a

CASE OF BURST PURULENT APPENDAGES.

Before Dr. Goodell had seen her she had had an attack of general peritonitis, supposed by her physician to be due to a burst cyst. She was six weeks in bed. On October 9th, Dr. Goodell found the womb fixed and a

tumor on the side, which suddenly collapsed while he was examining it. Two days later he operated on her, and removed from the peritoneum a large amount of grumous and dirty fluid. It had come from a collapsed right ovarian cyst. Both tubes and the other ovary contained the same fluid. Recovery was prompt.

DR. M. PRICE had elsewhere called attention to the danger of rupturing cysts by rough handling, especially extra-uterine gestation sacs. He thought that Dr. Goodell was very lucky in saving his patient. Where such an accident has happened, the operation should be done at once, and a delay of two days was not proper.

DR. B. F. BAER had met with several cases of cysts which were ruptured. In one case he had found a cyst and advised its removal; subsequently another physician said there was no cyst there. She then returned to Dr. Baer, and he could not find the tumor even under ether. A few months later the tumor had reappeared, and a successful operation removed it.

DR. WM. GOODELL could not wholly accept the remarks of Dr. Price. He had some years ago accidentally ruptured a small cyst while examining it on his office table. It returned, and twice subsequently he ruptured it. After the third time it did not return. He afterwards did the same thing in another case. At the present day he would not do so; but these facts showed the tolerance of the peritoneum to such accidents.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF LONDON.

Wednesday, November 6th, 1889.

A. L. GALABIN, M.D., *President, in the Chair.*

Specimens.—DR. BOXALL: Pelvic Hematoma following Delivery; death four hours after labor. DR. W. S. A. GRIFFITH: Microscopic Sections of the Uterus at different periods of the Puerperium; showing complete absence of the alleged fatty changes. DR. CULLINGWORTH: Uterus, Ovaries, and Tubes from a case of Cesarean Section. DR. DAKIN: Retroflexed Fetus with Ectopia of the Viscera and Talipes Valgus. DR. W. DUNCAN: Myoma of the Broad Ligament.

Report.—A report was read on MR. ALBAN DORAN's specimen of membrane passed from the uterus, exhibited at the July meeting.

CASE OF LARGE CHYLOUS CYST OF THE MESENTERY.

This paper was read by DR. RASCH. An anemic girl, age 21, was admitted into the Deaconesses' Hospital at Tottenham on February 9th, 1889. About a month before admission she lifted a heavy trunk; a week later she was seized with severe abdominal pain. A large, roundish, elastic swelling occupied the middle of the abdomen, extending mostly to the left. Its upper extremity reached two inches above the umbilical level. The pelvic organs were normal. At the operation, on March 22d, a glossy, pale pink tumor was discovered. A milk-white fluid exuded on tapping. On

exploration it became evident that what appeared to be a cystic tumor were the two layers of the mesentery, separated from each other by a collection of milky fluid. The inside of the cyst was intensely congested and oozed freely. The cyst cavity was sponged clean, and, like the peritoneal cavity, washed out with warm boracic lotion. The cut edges of the cyst were sewn to the abdominal wound, and the cavity packed with iodoform gauze. The whole was covered with sublimate gauze after dusting with iodoform. Six pints of the cyst contents were collected. Next day the fluid, at first, white, became pink and contained a firm, pinkish clot. The microscope and chemical examination appeared to prove that the fluid was chyle. No epithelial lining could be found on a small piece of the cyst wall which had been cut away for examination. The patient made a fair recovery; the milk-white fluid oozed for some time from the cyst cavity, which at length closed up. During this drainage she lost weight considerably, and regained weight as the escape of fluid lessened. Dr. Rasch believed that this was the first recorded case of a chyle cyst of the mesentery occurring in a woman. Winiwarter has recorded a chyle cyst in the right hypochondrium of an infant. Dr. Kilian operated on a large retroperitoneal lymph cyst. Dr. Rasch did not think that in his case the cyst arose from obstruction of the thoracic or other lymphatic duct, but more probably to the rupture of a mesenteric lymphatic during exertion. Dr. Rasch then spoke of the difficulty of diagnosis. Mesenteric tumors generally appeared first in the middle line near the umbilicus, and had free transverse but little vertical mobility. Professor Bergmann's case of chyle cyst of the mesentery occurred in a man aged 63. Dr. Rasch lastly justified his treatment as preferable to extirpation of the cyst or closure, after emptying of the contents, without drainage.

DR. WILLIAM DUNCAN suggested that the tumor in Dr. Rasch's case might well be dermoid and not chylous.

DR. BOXALL could scarcely see how the escape of chyle into the loose cellular tissue of the mesentery could produce a cyst, but he thought that the possibility of a chylous cyst in that situation, originating in an echinococcus cyst, should be entertained. Hydatid cysts were sometimes barren, and if blood and bile could find their way into them there were *prima facie* grounds for believing that in a situation in which lacteals abounded chyle might do the same, and distend the cyst so that all trace of its pristine nature might eventually disappear.

DR. C. H. CARTER referred to his case of large cyst of the mesentery simulating an ovarian cyst, published in the *British Medical Journal*, vol. i., 1883, page 7. He agreed with Dr. Rasch that a tumor of this kind should not be enucleated, but stitched to the abdominal walls and drained.

MR. ALBAN DORAN considered that Dr. Rasch's definition of the tumor as a chylous cyst was perfectly reasonable and probably correct. Non-ovarian dermoids of the abdomen were rare; dermoid cysts of the ovary frequently become detached from their pedicles, and, adherent to omentum, mesentery, or bowel, an obvious source of fallacy, especially when the pelvic organs were not explored. In Dr. Rasch's case these organs were explored.

DR. MATTHEWS DUNCAN mentioned a case where Mr. Thornton removed a large mesenteric cyst with clear contents. The operation showed no connection with the uterus and broad ligaments. In another case, Mr. Langton removed both ovaries, converted into dermoid cysts, and also took away a third dermoid tumor from between the layers of the mesentery; it had no connection with either ovary.

MR. DORAN remarked that an exogenous secondary cyst, springing from

the surface of an ovarian dermoid, might easily become detached and so be taken for a non-ovarian tumor.

DR. RASCH was confident that the cyst in his case was chylous and neither of hydatid origin nor dermoid.

A CASE OF VESICO-UTERO-VAGINAL FISTULA.

DR. CULLINGWORTH read notes of a case where incontinence of urine followed instrumental labor. The patient was aged 37. A vesical fistula was found in the middle line of the anterior vaginal wall, running transversely just in front of the cervix, in the furrow formed by the reflexion of mucous membrane from the vagina to the cervix. The fistula admitted the tip of the finger up to the first joint. The portion of the cervix projecting into the vagina was intact; but on passing the finger through the fistulous opening, a laceration with ragged edges was detected higher up, in the posterior wall of the bladder, extending into the cervix. On passing a uterine sound into the cervix, the point entered the bladder through the laceration. An operation was performed when the morbid condition was not two years old. Dr. Cullingworth divided the anterior lip of the os uteri. The cervical laceration at once gaped widely, and, by elevating the anterior margin of the vaginal portion of the fistula with a hook, it could be seen to extend obliquely upwards and to the left to the distance of about an inch. The edges of the laceration were then freshened and united by three or four silkworm-gut sutures passed from the outer aspect of the cervix and tied, presumably within the bladder. The ends, left long enough to reach the vulva, were brought through the vaginal portion of the fistula. By the milk test the vesico-uterine fistula was proved to be closed. On the thirteenth day the stitches were removed, and the wound appeared to have healed. The vaginal portion of the fistula was closed by operation six weeks after the first procedure; it had already undergone contraction, and its long axis was no longer transverse, but nearly parallel with the axis of the vagina. The sutures were removed on the eighth day. The patient shortly afterwards left the hospital perfectly cured. Dr. Cullingworth called attention to his practice of leaving the ends of the sutures sufficiently long to hang down in the vagina. This plan greatly facilitated removal, and avoided much irritation from pricking up of the vaginal mucous membrane. Had the first operation not succeeded, Dr. Cullingworth intended to dissect up the bladder from the cervix, and deal with the uterine fistula after Dr. Champney's method.

DR. W. S. A. GRIFFITH had recently operated on a similar case by the usual operation. The bladder remained water-tight, but he had heard that the menstrual blood passed entirely into the bladder. He offered to correct this condition, but the patient was so pleased with the freedom from the ordinary inconvenience of menstruation that she declined to have anything done.

DR. WILLIAM DUNCAN always used silver sutures in vesical fistula, fastening them with coils and shot to facilitate removal, and passing all the sutures through a piece of india-rubber tubing to prevent irritation of the vagina.

DR. CULLINGWORTH referred to a valuable memoir on the subject, by Mr. Milton, of the Civil Hospital at Cairo, published in the St. Thomas' Hospital Reports for 1887. Mr. Milton had operated on fifty cases, on some patients more than once. The native women, who simply waited till the child was born, were very subject to urinary fistulae; on the other hand,

lacerated perineum was scarcely ever seen. He trusted that Mr. Milton's paper would not be overlooked.

A CASE OF LUPUS OF THE VULVA.

DR. LEWERS read a case of a woman, age 22 and married six years, who was admitted into the London Hospital in August, 1888. There was a history of gonorrheal, but not syphilitic, infection. A small growth appeared on the vulva, which became swollen. On admission, a spherical, pendulous lump, whitish and smooth on its inner surface, brownish and nodular on its outer aspect, was found growing from the left labium minus, prepuce of clitoris, and part of the right inner labium. The labia majora were swollen, not pitting on pressure, and were studded externally with small, warty prominences, also seen on the perineum and mons veneris. On August 28th, 1888, the tumor was cut away by the thermo-cautery, its base being first held secure by two Wells large pressure forceps. In January, 1889, a lump the size of an almond was pinched up and dissected out from the right side of the vulva by the thermo-cautery. The labia majora remained swollen. Dr. Lewers found that the tumor consisted of an enormously hypertrophied labium minus. The tendency of lupus was towards hypertrophy combined with ulceration, and recurrence had occurred in this case after apparently complete removal of the hypertrophied and ulcerated tissue. The general health of the patient had been little if at all affected.

DR. WILLIAM DUNCAN noted that in the discussion on Dr. Matthews Duncan's paper on "Lupus of the Vulva," Mr. Jonathan Hutchinson expressed his opinion that the cases were syphilitic and not lupous. With this opinion Dr. W. Duncan strongly coincided, and he considered that Dr. Lewers' case was hypertrophic syphilide exactly similar to several which had come under his own care. He asked if Dr. Lewers had put the patient under a course of strong antisyphilitic remedies.

DR. LEWERS stated, in reply, that when Dr. Matthews Duncan read the paper referred to it was agreed that the administration of antisyphilitic remedies decided nothing, since late results of syphilis were often unaffected by these specifics. Dr. Lewers gave reasons for rejecting any suspicion of syphilis in his own case. Winckel figures, in his "Diseases of Women," a morbid condition identical with that which was seen in Dr. Lewers' patient, under the name "elephantiasis of the vulva."

REVIEWS.

A MANUAL OF OBSTETRICS. By A. F. A. KING, A.M., M.D., Professor of Obstetrics and Diseases of Women, Med. Depart. Columbian University, Washington, D. C., and in the University of Vermont, etc. Fourth edition. Pp. 420; 141 illustrations. Lea Brothers & Co., Philadelphia, 1889.

We are pleased to announce the fourth edition of Dr. King's most excellent and well-known work, a volume which, while wonderfully complete, is a model of concise clearness. The present edition bears marks of careful revision; much new matter having been incorporated, together with chapters on the Intercurrent Diseases of Pregnancy and the Resuscitation of Still-born Children.

INTRODUCTION TO THE TREATMENT OF DISEASE BY GALVANISM. By SKENE KEITH, M.B., F.R.S.C. Edinburgh; late Special Assistant Surgeon, Royal Infirmary, Edinburgh. Pp. 62; 30 illustrations. Truslove & Shirley, London, 1889.

This is a brief but satisfactory exposition of the principles of electrophysics necessary for the physician to understand in order that he may employ electro-therapeutics scientifically and safely in cases where powerful currents are requisite.

ABSTRACTS.

1. A. Jacobi: Enteralgia and Chronic Peritonitis (*Transactions of the Medical Society of Virginia*, 1889).—Enteralgia being an affection of some nerve branch or branches of the intestine, its cause must be sought for either in the nerve itself and alone, or in a change of either the intestinal tissues or the contents. The nerve may be affected directly by a hysterical and hypochondriac condition, by malaria and gout, and by poisons, such as lead; or the pain may be the peripherous result of a disease of the spinal cord; or it may be the reflected effect of an irritating affection of the liver or genito-urinary organs or the skin. The latter cause is quite frequent. Indeed, sudden refrigeration of the surface, "cold," is a more frequent occurrence than is claimed by some of those who look upon everything as obsolete and fallacious, only because it is old and has once been generally accepted. The anatomical changes of the tissue resulting in enteralgia may vary between a simple congestion or nutritive disorder, and an inflammation with its results. Thus the congestion of the colon, connected with the prevalence of extensive rectal varicosities, gave rise to the term hemorrhoidal colic; and enteralgia depending on every form of enteritis and colitis, ulcerations (more frequently dysenteric than typhoid) and stenosis, is quite frequent. Alterations in the contents need not be very great in some persons to give rise to enteralgia. Some are easily affected by certain articles of food, particularly acid ones. Certain drastics, such as senna, and many poisonous substances give rise to severe griping pain. The presence of hard scybala may so obstruct the bowels as to produce enteralgia by direct pressure or locking up gas. Putrid food, or fermentation of otherwise normal food, meeting insufficient or faulty digestive juices, will have the same result. So will foreign bodies, both those that are swallowed and such as are more permanent tenants, viz., animal parasites. The definition and the exact nature of enteralgia are not modified by the duration of the pain. It may be quite short or extend over a long time, and begin and end gradually or suddenly (paroxysmally), with temperature normal or subnormal, rarely elevated; pulse sometimes slow, sometimes innumerable; skin cold and clammy; sometimes dysuria, nausea and vomiting, constipation or diarrhea. At the same time, the abdomen is tumid—either generally or locally; when the latter, the local tumidity is apt to change its place under inspection or on palpation. In some cases, there is no such inflation, but rather a retraction. This is so mostly in cases of strictly nervous origin; in others there is a spasmodic contraction of abdominal muscles and cremaster. With the spastic rise of the testicles there may be connected priapism and seminal discharges.

Many of the attacks of pain called colic and enteralgia are only the symptoms of, mostly chronic, peritonitis. Primary peritonitis of any kind is very rare, and then mostly traumatic, the result of wounds, probing and paracentesis for ascites included. Many more result from exposure—"cold." Most cases are of a secondary nature, with very numerous causes. It may arise under the influence of general diseases—rheumatism, alcoholism, scarlatina, measles, erysipelas, malaria, scurvy, tuberculosis, and curcinosis.

The inflammation of the neighboring thoracic cavity may be transmitted through the patent stomata of the lymph ducts on the upper and lower surface of the diaphragm; and disorders of circulation depending on pulmonary and cardiac disease will result in congestion of the peritoneum, both visceral and parietal, with its possible consequences—viz., inflammation or ascites, or both. The presence of new formations in the abdominal cavity acts like that of a foreign body. Adhesions to an unexpected extent are often found during ovariectomies. A sarcoma of the kidney is often glued to the colon in front of it, or to other intestines; swelled pelvic glands, in connection with irritated inguinal and tumefied mesenteric glands, will often be found with secondary peritonitis. A young woman, whom I saw dying with acute peritonitis, had been affected with purpura for some weeks; at the autopsy, that peritonitis was found to be the consequence of hemorrhages from some ruptured vessels of the diaphragm. Floating kidney, by its changing position and irritating contact with the peritoneum, is quite liable to light up a chronic inflammatory process, thus becoming fixed by adhesions, and dislocated after having been floating. Affections of the vertebral column and adjoining organs will produce peritonitis; so will spondylitis, mostly tubercular, and abscesses of the bone; also thoracic abscesses following the course of the fascia downward; and abscesses of the psoas and iliac muscles, or perforating abscesses of the socket of the hip joint. Amongst the most frequent causes of peritonitis are catarrhal and inflammatory diseases of the female sexual organs. Besides the opportunities afforded by menstruation—viz., salpingitis, parametritis, perimetritis, and endometritis—there is no more frequent mischief than that originating in the sexual functions of woman. Cohabitation is sometimes, the puerperal state very often, the cause of persistent peritonitis.

The irritation or inflammation of any of the organs contained in the abdominal cavity is liable to produce peritonitis. A swelling of the liver from a simple secondary congestion to an abscess, or a hydatid cyst which expands the covering of the organ, makes perihepatitis. The presence of a biliary calculus obstructs the common bile duct, not so often by its presence as by the local peritonitis brought on by pressure. Perinephritis will often spread and lead to intraperitoneal inflammation; diseases of the spleen and pancreas have the same result. The intussusception of the nursing leads always, on the locality of the invagination, to local hemorrhage and inflammation; irritation and inflammation are quite frequent in the left hypogastrium of the young, where the normally long colon of the infant is sometimes folded in a number of flexures compressing each other, and about the right and the left curvatures of the colon, as the result of obstinate constipation, with dilatation and thickening of the colon.

The most frequent cause of peritonitis is a preceding peritonitis. When a case is examined after death, the positive proofs are found of one or more attacks preceding the fatal one. Thus, if not the proximate cause of death, at all events the main cause may be set down to have been a previous attack. J. does not remember a case of perityphlitis but what exhibited the adhesions, discolorations, and contractions due to former peritonitis; frequently the vermiform process was attached to the side or the posterior wall of the colon; the tissues of the intestine were thickened, the parietal peritoneum whitish and thickened, and the orifice of the process patent. It is probable that there are few, if any, cases of foreign bodies entering the process unless the latter have previously lost its elasticity and contractility by an inflammatory change.

Anatomical changes.—Alterations of the mucous membrane of the intestine are the initial stages of local peritonitis in many instances; of general peritonitis in some. It is not only the intima and submucous tissues which are suffering, but the muscular layer is implicated in the morbid process. It is not necessary here to recall the histological changes; it suffices to point to the clinical and anatomical fact that a simple intestinal catarrh is growing easily and speedily into an enteritis. The vascular connection between the three principal layers of the walls of the intestine is such as to facilitate the transmission of an inflammatory process from one to another. Thus it

is that a peritonitis—that is, the inflammation of the serous membrane—is communicated to the muscular and mucous tissues, thereby spreading edematous infiltration, paralysis, and constipation; thus also it is that a common diarrhea is able to develop in a shorter or longer time a local peritonitis. If it were necessary to exemplify this intimate connection of the two, it would perhaps be a desirable illustration to recall the facility with which anatomical changes take place in the mesenteric glands in the course of a common diarrhea. No morbid process can be expected to be isolated in a locality which is supplied with an active blood and lymph circulation. Thus it is that an intestinal catarrh grows to be an enteritis, the enteritis a peritonitis. This condition of things is still more frequently observed in cases of intestinal ulceration, both acute and chronic. The most intense form is the peritonitis following the perforation of a gastric or intestinal ulcer, with its speedy fatal termination. But without perforation, an ulceration will lead to peritonitis which is mostly local, or local in the beginning and liable to change into an acute attack under favorable circumstances. It is very easy to verify the following condition of things: Where there is an open ulcer, or one that had cicatrized months or years before, in the stomach or in the intestine, no matter of what nature, either catarrhal, or dysenteric, or typhoid, or tubercular, we frequently find opposite the ulceration or cicatrix that is in the peripheral covering a local peritonitis. There is a thickening, circumscribed and distinct. In recent cases, it is rather soft and succulent, with much vascular injection; in old cases, the original cell proliferation has undergone organization and hardening, the thickened spot is gray, whitish, hard, and has lost its elastic and soft feel. Not only does it feel less elastic; it is so. It is very apt to burst under a moderate amount of pressure, and lead to perforation. In the midst of apparent health, intestinal perforation will set in and death ensue within a day. The mysterious catastrophe is explained by the autopsy, which reveals a perforation in the midst of such a local peritonitis as is above described. Then only it is that the medical man will learn that the man called away so suddenly was the victim of the perforation of the cicatrix of a typhoid ulceration contracted a dozen years previously.

The diagnosis of chronic peritonitis is frequently missed. As stated before, unforeseen adhesions are often found round tumors; movable kidneys become fixed, intestines glued together—all without recognizable symptoms. In chronic peritonitis, respiration need not be accelerated; particularly is that so in pelvic peritonitis, perimetritis, and pericystitis. There may be occasional vomiting, particularly where there happens to be an intervening acute catarrh; but there are other conditions—for instance, renal and biliary colic—which are more liable to exhibit that very symptom to an excessive degree. Indeed, it is so often absent in chronic peritonitis that its very absence, being a negative symptom, is not of much account. Even in many acute cases it is not met with. There is, for instance, none in twenty-five cases out of a hundred of septic peritonitis of the newly born. Constipation is frequent, diarrhea not unusual. Horizontal posture is often quite uncomfortable; but a common colic depending on gas not absorbed or expelled induces the same posture (*viz.*, the knees drawn up) in most instances. However, when horizontal posture is shunned in chronic peritonitis, the patient is more apt to be quiet with raised knees than he who is suffering from flatulency; very few of this class will abstain from kicking and moving. The abdomen is apt to be tumid, but it must not be overlooked that general adiposity is mostly developed on the abdomen; that women who have had children are liable to have large and prominent abdomens; that that of the healthy baby is so large as to measure one-third of his whole length; that a simple hysterical dilatation and inflation may simulate that which is produced by peritonitis; that with the former there is sometimes an edematous swelling of both hypogastric regions, which complicates the diagnosis still more seriously, and that there may occur a local dilatation of an intestine from habitual constipation only. The surface of the abdomen exhibits nets of dilated veins more frequently in peritonitis (and hepatic diseases) than in any other morbid condition. Now and then there is a fric-

tion sound or a slight crepitus on auscultation; inspection may also reveal solitary convolutions which rise above the level; and palpation may lead to the discovery of exudations in various shapes and sizes, nodules, lumps, cakes, hard and soft, which are either organized material or glued intestines. Percussion may discover these solid masses or fluid contents. Fluctuation will show ascites more readily than percussion for the latter may fail in this, as there may be adhesions between the parietal peritoneum and intestine in the flanks. The gas contained in the adherent bowel will then yield the tympanitic percussion note, though the region may be filled with fluid; a change of posture, from side to side, or from the horizontal to the vertical, may contribute to dispel the doubt.

A chronic peritonitis is sometimes diagnosticated with more or less certainty in the following manner: The patient is on her back, extremities now extended, then again flexed. Pressure is tried—soft, hard, sudden, or gradual, superficial or deep, in the usual way. Often the seat of the pain, inflammation, or adhesion is thereby made manifest. In many cases, however, the following manipulation answers best: Make deep pressure with the palm, fist, or a finger. Perhaps there is no pain. Relieve the pressure at once, and a local, very distinct, and circumscribed pain may be felt. Repetition of the experiment will give the same result always, the symptom being elicited by the sudden change in the relative position of the bowels. Not only pain, but the presence of floating exudations can be distinguished by this and similar manœuvres.

Every change in the relative position of the bowels may rouse a pain. A sharp pain after a full meal may point to adhesions of the stomach; three or four hours after eating, to chronic colitis; a quickened inspiration or a cough, to perihepatitis; toward the end of micturition, to pericystitis.

Pain is a very frequent symptom in chronic peritonitis. It may be mild, severe, of short duration, or persistent. Its variability depends often on the degree of irritation or congestion. Acute attacks are frequent when there is a cause for exacerbation.

The seat of the pain varies with the location and the extent of the lesion. Extensive peritonitis in the pelvis may not give rise to pain except such as is waked up by defecation, cohabitation, or micturition. Attending pericystitis is well characterized by its pain, which appears when the urine has been voided about one-half and the bladder contracts more efficiently. In this it resembles much the spasmodic pain of vesical catarrh, with this exception, that it is more localized above the pubes, and manifests itself by pressure more readily.

In most cases, the pain of chronic peritonitis cannot always be diagnosticated from the enteralgia produced by other causes, such as abnormal contents, fermentation, flatulency. Indeed, the anatomical changes of chronic peritonitis give rise to those other conditions. By it the intestinal movements are retarded; stenosis may result from it, also twisting and adhesions; and through them every function is seriously interfered with. If it were easy, or in many cases possible, to make the diagnosis of the pain, the mistakes would not be so frequent, and the condition of things of which you have permitted me to speak before you could not to-day be the subject of our discussion. The results of chronic peritonitis are very various. A simple attack of acute exudation may shape the future of the patient.

Treatment of Enteralgia Depending on Chronic Peritonitis.—The indications for treatment are given by its results and symptoms, amongst which are prominent, besides the pain, sluggishness of a part of the intestine, constipation, adhesions and bands, and intervening subacute and acute peritonitis. The latter require appropriate treatment, such as absolute rest, with support for the knees, ice or warm or hot applications, according to circumstances, and opiates in sufficient doses. As a general treatment, the latter are more justified than the sulphate of magnesium and turpentine enemata recommended by some. For the treatment under which an occasional patient may escape death must not supersede one which has proven to be successful in most cases and beneficial in every one.

The localized attacks, mainly in the right hypochondrium demand local

applications; occasionally a few leeches and subcutaneous injections of morphia may become necessary. Old adhesions and organized bands are not amenable to medicinal treatment. A person afflicted with chronic peritonitis must not choose work which requires great physical exertion, straining, and lifting; must avoid injuries, pressure on the abdomen, jumping, jolting, and straining during defecation, or working at the sewing machine, etc. His bowels must be kept regular by a daily enema, even when there is an occasional apparent diarrhea, for this diarrhea is often complicated with constipation and alternating with it.

Besides the daily enema, the main reliance is on the wearing of a snug bandage which must cover the whole abdomen, and is fastened low down by soft straps passing under the perineum, both in front and behind. Thus, jolting and moving of the intra-abdominal contents are avoided. That bandage must be worn until the patients have not complained for years. In hundreds of cases J. has known it to give immediate relief; without the immobility given by it to the sore intestine, he does not expect a case to do well.

2. Van der Meij (Amsterdam): The Shrinking and Disappearance of Tumors (Transactions of the Gynecological Clinic of Amsterdam), (*Nederl. Tijdschr. voor Verloskunde en Gynckologie*, Jahrg. ii., Hft. i., p. 67).—Dr. Berns communicated in the *Nederl. Tijdschr. v. Gynckkunde*, 1880, No. 37, a case where the diminishing in size of an ovarian tumor could be distinctly seen by him. The tumor, the size of a child's head, had decreased in one and one-half years to the size of an egg. As such cases are quite rare, V. d. M.'s description dwells especially on the symptoms.

The case was that of a woman, four years married, who had never had children nor aborted. For seven weeks she complained of continuous hemorrhages, ceasing for a short time, as, for example, two days. Previous to this, the menses, beginning at the thirteenth year, were very scanty. Upon palpation there was found in the abdominal cavity a smooth, non-fluctuating tumor reaching to the umbilicus. On internal examination the tumor was palpable at the anterior vaginal fornix. If one pressed it between the two hands, a slight movement of fluid could be felt. A trial puncture showed the fluid to be colorless, somewhat opaque, and very weakly alkaline, specific gravity 1.006; serum albumin and met-albumin also were among its contents. The diagnosis lay between an echinococcus and an ovarian cyst. A few weeks after the puncture, only sixty cubic centimetres being drawn off, the tumor had much diminished in size. One could not feel it by palpation, but only by percussion and combined examination; and a week afterwards it had completely disappeared, and the uterus had returned to its normal position. V. d. M. especially emphasizes that the patient did not complain of the puncture nor of any symptoms of pain; neither the diuresis nor the diaphoresis had increased at all; the vaginal secretions were normal. Only a few days after the puncture the temperature rose to 38.2° and once to 38.8°. V. d. M. is of the opinion that the opening made by the puncture did not close; the contents of the tumor, oozing into the abdominal cavity, were absorbed. The slight rise in temperature seems to agree with this. P. P.

3. A. Mars: A New Method for the Extraction of the Fetus by the Breech (*Przegląd lekarski*, 1889, 21).—M., after giving a review of the various methods of extraction of the breech when lying high in the pelvis, describes a method by which he has succeeded in three cases in extracting the fetus when the usual methods were unsuccessfully tried. Case I., first position, os uteri entirely open, the fixed breech high in the pelvic entrance, beginning pulmonary edema. Attempts at extraction having failed, he tried the following procedure: After fixing the fundus uteri with the left hand, the right was placed flat in the vagina, pushed up between the uterine wall and the sacrum of the fetus to its back; and when the palm of the hand lay upon the sacral bone of the fetus, three fingers—*i.e.*, the second, third, and fourth—were extended along the spinal column, while the index and

little fingers grasped the fetus over the crests of the ileum. During the pains the hand was continually pressed upon the back of the fetus by the uterus, thus insuring a firm hold. Whenever a pain came on, he drew down as if he would extract his hand. By such tractions, during the following pains the breech was brought down to the pelvic floor, when the hand could be taken out. After hooking the fingers over the hips, the fetus was extracted by the ordinary method.

P. P.

4. A. S. v. Mansfelde: La Couveuse: A Plea for the Better Care of Immature Children (*Omaha Clinic*, Oct., 1889).—The author reviews and criticises the exceedingly scanty, ambiguous, and unsatisfactory literature on this important subject. He calls attention to the examples furnished by nature of the necessity of an extraneous post-natal heat supply. The warmer nests, instinctively supplied for the new-born animal in colder climates, have been imitated by human mothers in the additional dress with which they supply their offspring. The order of *Marsupialia*, which habitually give birth to their young in an immature condition, have pouches (*marsupia*) in which they hatch their progeny; these remain attached to the nipples for varying periods, and the muscles of the mammae express the milk into the mouths of the embryos, for such they really are, until their strength permits them to do the work of sucking for themselves. These and many other provisions of nature have evidently been the prototypes for man to provide his own offspring with the varying contrivances for protection from climatic vicissitudes, from a covering of ashes, leaves, and skins, to a wrapping of cotton-batting, hot-water bottles, and the couveuse. The latter was first used in 1835 by Von Rühl at the Imperial Foundling Home at St. Petersburg. It was again independently employed in 1854-57 by Crédé and Dénuce. Tarnier first applied the principles used in the egg-hatching machine in 1878, and his idea has been modified most successfully by Hearson and Eustache, and Auvard. All of these forms were more or less complicated and costly, Auvard's being the most practical. Fuerst (*Deutsch. med. Woch.*, Sept., 1883) has devised a most simple and effective form, which can be made by any carpenter, and which M. has modified by substituting soapstones for the heated tiles employed by Fuerst. Any wooden box, with cover, at least sixty-three centimetres long, thirty-seven centimetres broad, and forty-two centimetres deep, has nailed upon the four corners of its top blocks of wood from one to one and one-half centimetres in thickness, upon which the cover of the box can rest, thus providing an opening for the exit of air. To furnish an opening for the entrance of air and for the use of additional soapstones, an opening is made on one side at the bottom of the box, wide enough to admit three soapstones side by side, and a little higher than the thickness of the stones, so that the air can freely enter. The cover of the box also receives two openings; one for the attachment of a pane of glass for a window of observation, and another, a smaller one, for the adjustment of a thermometer as a guide for the maintenance of an even temperature. The interior of the chest is as simple as its exterior. Into each of its corners an eye is screwed, eight in number, and through these, near the bottom and top of the box, two wires are horizontally drawn. The only object of these is to fence out the soapstones, which are vertically placed between the wires and the walls of the chest, except, of course, the three stones which are slipped into the lower opening. Enough room should be left between the wires and the walls to allow the easy placing and removal of the stones, yet not enough to permit their falling over. Simple handles of rope are fastened through small holes in the narrow sides of the chest, thus facilitating the removal of the chest from one room to the other. Two hooks on the inside of the chest above the handles are for the attachment of a hammock, into which the child is placed, and at the same time the hooks serve to hold wet sponges to moisten the atmosphere which surrounds the child. A board in the bottom of the hammock makes of the latter a safe receptacle, which is made more secure by being tied with ribbon over the child. Before this box is used it should be heated to a temperature of 90°, where it is easily maintained by occasionally changing a stone for a hotter one.

The air in such a chest can circulate freely. It enters at the bottom, where it is warmed, is saturated with moisture from the sponges, and, after enveloping the child on all sides, escapes at the top; it is constantly renewed and furnishes fresh and *warm* air for respiration at all times. The temperature of the body is, as experiment proves, increased; the radiation of heat from lungs and skin lessened, and loss of temperature, so dangerous to the child, prevented. The main thing, however, is the ease with which the couveuse can be made and the trivial cost of the same, which permits its use anywhere, and by any one who can lay the least claim to a nurse.

The prematurely-born child contends with all the odds against the maintenance of an even temperature, without which life is impossible. Its tiny organs, inactive and immature, are out of proportion to the surface of its body, from which more heat is radiated than food and metabolism can furnish. The panniculus adiposus, such a barrier to the escape of heat, is undeveloped. Substitute *this* with the environment of the couveuse; feed the child its mother's milk if you can, prepared milk of the cow if you must; use the spoon for feeding, and if the child will vomit or cannot be fed, use *gavage*—it will often save when ordinary feeding fails; and finally surround the child with a constant moist atmosphere of at least 85° to 90°. We lose sixty-six of every one hundred prematurely-born children, babies which do not weigh more than two thousand five hundred grammes and measure more than forty-five centimetres. The maternities of St. Petersburg, Leipzig, Paris, and London have reduced the figures to thirty-six per cent; and with proper care we should do the same.

5. A. Marx (Krakau): Amenorrhea lasting until the Forty-eighth Year; Appearance of the Menses (*Przegląd lekarski*, 1889, 9).—The patient was 48; married twenty years; had never menstruated. No mola-mena. She consulted many gynecologists and visited different watering places, but all without the desired result. Until her forty-second year her health was good; she had never suffered any pain. At this time a leucorrhœa appeared, which was readily cured by astringent injections. Soon afterwards pains began in the left inguinal region and in the abdomen, which regularly reappeared every month, lasted for several days, and were complicated with convulsions and gastric disturbances. During a violent attack of pain M. was called to see the patient. Upon the basis of the history of the case and a thorough examination, the following diagnosis was made: Uterus parous, amenorrhœa, oöphoritis (left side), chronic intestinal catarrh, hysteric convulsions, enteralgia. Other means failing to relieve the pain, local abstraction of blood was resorted to. This was repeated every month for some length of time, and finally led to a complete cure. After cessation of the treatment, regular monthly hemorrhages appeared in the then 48-year-old woman. The patient is now 52 years old, is perfectly free from pain, and enjoys relatively excellent health. The menses are regular but scanty; the menstrual blood pale. P. P.

6. C. Lomer (Hamburg): Measles in Pregnancy; Birth of a Child with Measles (*Cent. für Gyn.*, 48, 1889).—The patient was 22 years old, unmarried; was always well and had never had measles. Pregnant since October, 1887 (for the first time), she expected to be confined about the middle of July, 1888. During the prevalence of a very violent epidemic of measles she suddenly, on the evening of June 7th, had an attack of chill, cough, hoarseness, burning in the eyes, and diarrhea. On June 8th, at 4 o'clock, labor pains appeared, and at 11 o'clock in the evening a premature living child was born. Dr. Storch saw the patient on the morning of the 9th; he found the mother as well as the new-born child to have a pronounced measles-exanthema. This exanthema was still present on the 11th, when L. saw the patients; in the mother it was still very distinct upon the whole body; in the child it was recognizable in the form of a few dark spots upon the forehead and chest.

The mother was attacked by pneumonia on the fifth day of the puerperium, but recovered. The child died after four weeks of intestinal catarrh.

Cases of pregnancy complicated with measles have been but rarely described. The text-books say nothing about it. Gautier (*Ann. de Gynécologie*, 1879, p. 321) could only gather eleven cases belonging here, most of which are of an older date and are incompletely reported. In these eleven cases infection of the mother took place six times in the last month of pregnancy, and in all six cases the children (so it is stated) were born with measles-exanthema or showed soon after evidence of it. But in one case, *carefully observed* by Gautier, the child was born free from infection. It also remained uninfected, although it was nursed by the mother. In the other four cases the infection of the mothers led to an interruption of the pregnancy, two mothers dying.

In this case also the attack of measles caused premature labor (five weeks too early).

The death of the child will have to be ascribed to the premature birth and the insufficient care (the child being illegitimate), and not to the measles-infection.

P. P.

ITEM.

THE following was received too late for insertion in Dr. Wathen's paper on craniotomy in the December number :

DEAR DR. WATHEN : Cesarean statistics are changing every day and do not hold good very long, as about 6 Säger operations are performed, on an average, monthly, and I am daily watching case 208 on my list; if she recovers (this is her tenth day) it will make 16 out of 34 for the United States, and 157 out of 208 for the world, in 12 countries, with 181 children saved. The Porro operations are 269, with 147 women saved and 229 children delivered alive. So you see the Säger leads in results to women, with 51 less operations.

Yours truly,

ROBERT P. HARRIS

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SUBSEQUENT BEHAVIOR OF CASES OF EXTRA-UTERINE
PREGNANCY TREATED BY ELECTRICITY.

BY

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IN the AMERICAN JOURNAL OF OBSTETRICS AND DISEASES OF WOMEN AND CHILDREN of last year¹ * I reported a case of extra-uterine pregnancy successfully treated by electricity, and prepared a *résumé* of forty-three cases which I had been able to find in the various medical journals. Since that article was published I have found reports of ten more cases, which I herewith briefly present :

CASE I.—Case of W. H. Taylor.² Three months' fetus. Six applications of galvanism under anesthesia, after which tumor diminished in size.

CASE II.—Case of H. F. Walker.³ Two months' (?) tubal pregnancy. Five applications of faradism. Cured.

CASE III.—Case of Galabin.⁴ Tubal pregnancy of eight weeks' duration; one electro-puncture and thirty-one vaginal electrizations. Tumor disappeared entirely.

CASE IV.—Case of Kletzsch.⁵ Fetus eight weeks old. Three faradic applications. Cured.

* The small figures refer to the bibliography at the end of the article.

CASE V.—Case of A. H. Buckmaster,⁷ seen by Skene. Four months' growth. Six applications of galvanism. Mass reduced in size.

CASE VI.—Case of Matthews Duncan and Steavenson (referred to by Aveling⁸). Faradism first applied to five months' fetus, then galvano-puncture. Woman died a few days later.

CASE VII.—Case of Boulton and Steavenson (also referred to by Aveling⁸). Two months' tubal pregnancy. Treated by electro-puncture. Woman died.

CASE VIII.—Case of Benton.⁹ Eight weeks' growth. Ten to fourteen applications of faradism. Diminution in size of tumor.

CASE IX.—Case of Bierwirth.¹⁰ Four to six weeks' growth complicating typhoid fever. Eight faradic applications. Reduced to small nodule after a month.

CASE X.—Case of Edebohls.¹¹ Eight weeks' growth. Six applications of the interrupted current. Complete absorption within six months.

The immediate effects of using electricity in the vast majority of the reported cases have been an abatement of symptoms due to the growth, and a marked diminution in its size. In three cases the fetus was probably expelled into the uterine cavity. In four cases alarming symptoms supervened, but passed away. In two cases suppuration with discharge of the fetus occurred, but the patients made a good recovery. Death occurred in five cases, but only one death can be properly attributed to the use of electricity. In this case hemorrhage occurred from the sac wall (Janvrin). In the other four cases electro-puncture was the method employed in two; in the third (Hicks'), simple puncture of the cyst, after electricity had been discarded, was responsible for the fatal result; in the fourth case the fetus was finally killed by morphine injections, and later the abdominal cavity was opened (Wylie).

In order to more accurately determine the subsequent behavior of cases reported cured under the electrical treatment, I opened a correspondence with the gentlemen who had used this method themselves or had known cases in which it had been used. I requested an answer to the two following questions: (1) What secondary dangers has your patient under-

gone as a result of the treatment? (2) What is the present degree of health of your patient, or when last seen? The idea of this correspondence was suggested to me over a year ago in a letter from Dr. R. P. Harris, of Philadelphia, and I take this opportunity of thanking the gentlemen who were kind enough to answer my inquiries.

The first communication to which I wish to call your attention is from Dr. W. Gill Wylie. Although he has never employed the electrical method himself, he is strongly opposed to its use. His opposition has this advantage over that of most other objectors, that he accompanies his theoretical objections with positive cases from his own practice. In these laparatomy was done after electricity had been employed. He has kindly referred me to two such published cases, but of the third case I have no details. The first case¹² was operated by Dr. Wylie, November 4th, 1885. The patient had been treated for extra-uterine pregnancy (presumably by electricity). On the above date the doctor removed the appendages, and the patient made a good recovery. The right tube contained three pints of fluid, left obliterated; no signs of fetus. The second case¹³ was operated February 10th, 1888. Electricity had been given under ether several times. The fetus was seven and one-half months old. It was finally killed by hypodermatic injections of morphia. At the time of operation the mother was far gone in sepsis. The fetus, placenta, and several quarts of decomposed fluid were removed. Drainage. Sponges left in abdominal cavity by mistake. Death in thirty-six hours from shock and sepsis. I regret being unable to give the details of Dr. Wylie's third case.* But these three cases certainly are not strong arguments against the use of electricity. In the first and third cases laparatomy was performed later, and no harm or injury was done by the electrical treatment. This is one of the consoling elements in a doubtful diagnosis. It has not been proved that injury has been done by treating other tumors than those of ectopic gestation with electricity. In

* From his letters I infer that a cyst of the ovary or broad ligament, which had been considered a cured case of extra-uterine pregnancy, required subsequent laparatomy. Whether it is one of the cases on my list I cannot say.

the second case electricity was entirely out of place, for the child was seven and one-half months old and was finally killed by morphine injections.

In 1883 Kochmann¹⁴ reported a marked shrinkage in the size of an extra-uterine pregnancy of six months' growth after the employment of statical electricity. Prof. Freund, of Strassburg, who saw this case, writes me that he regards it as one inappropriate for the purpose of determining the usefulness of electricity, and advises me not to notice it.

These are the only two answers directly opposed to the use of electricity which I have received from gentlemen who have seen failure follow its use. But it is only proper to add that the fetus in the case referred to by Prof. Freund was six months old, and the use of electricity is not recommended after the third or fourth month.

Ten years ago, Dr. J. C. Reeve, of Dayton, Ohio, reported having cured a case of abdominal pregnancy (three months') by faradism.¹⁵ To my queries he replies: "When last heard from she was certainly well. When last examined, about nine or ten months after treatment, a small induration could be felt per vaginam at the seat of the tumor."

Billington's case was reported in 1881.¹⁶ A three months' tubal gestation, after four applications of galvanism, ended in complete recovery. The answer, sent the early part of last year (therefore eight years later), declares that the patient, when seen a few months previously, was enjoying good health.

Dr. W. T. Lusk,¹⁷ in answer to my queries, writes: "I have lost sight of my hospital cases, but two private patients, in both of whose cases I had the counsel of Dr. Thomas, have been in perfect health since the arrest of the growth of the ovum in the third month. A hard, small body marks the spot of the pregnancy. There has been no pain or subsequent trouble. One of the patients has since been twice confined, and experienced no inconvenience either in pregnancy or child-bed."

In Herriek's case (reported in 1882¹⁸) a three and one-half months' growth steadily decreased in size after four applications of galvanism, and the diagnosis of extra-uterine pregnancy was approved by Drs. Thomas, Emmet, and Rockwell. Dr. Herriek answers my questions thus: "1. My patient had

no secondary dangers. 2. She has been in perfect health since."

In Westcott's patient¹⁹ a six weeks' tubal gestation was probably associated with normal pregnancy. Four applications of galvanism failed to disturb the normal pregnancy, and caused the extra-uterine mass to disappear. In his letter to me Dr. Westcott writes: "My patient with extra-uterine pregnancy that was treated with electricity suffered no secondary damage, has borne two healthy children since, and is now in perfect health."

Dr. H. J. Garrigues writes in answer to my questions: "I have only seen one patient again, namely, the one described in *Gynecological Transactions*, 1883. I saw her two years later. She had been well and the tumor had entirely disappeared."

In Mundé's case²⁰ the tumor was reduced one-third in size under electrical treatment. The doctor informs me in his letter that there were no secondary dangers and that the patient was in excellent health two years afterward.

The case of D. C. Cocks was reported in 1884.²¹ Twelve electrical applications were made to the three months' growth, after which a slight thickening only could be discovered after four months. The doctor has not seen the patient for two years, but has heard from her. He writes: "A few months after the application of electricity she passed, per rectum, some pieces of membrane indistinguishable from those I have seen passed by patients with membranous enteritis. Before her marriage she had ovarian neuralgia, and she has the same now. She has since been pregnant, but has miscarried."

Dr. H. Marion Sims²² answers: "I have treated only two cases of extra-uterine pregnancy by electricity. Both were abdominal. The first case had some slight pelvic inflammation after the treatment, and I am not aware of the present condition. The second had no after-results at all, and when seen last month, nearly five years after the treatment, she reported her health as perfect in every way."

Berlin,²³ of Boston, Mass., applied galvanism six times to a four months' growth in 1884. Five months later only a small portion of the mass was left. He writes that the patient has undergone no secondary danger whatever as a result of the

treatment. He saw the patient last about four years later, and she was then apparently perfectly well.

Dr. S. Beach Jones²¹ says in his letter: "I do not know of any secondary dangers undergone by patients who have been treated for extra-uterine pregnancy by galvanism. In the most marked case I now remember, I treated with galvanism a patient of Dr. Thomas seen by Prof. Barker and two other physicians in consultation, and the diagnosis was confirmed after repeated consultations. The patient was entirely relieved, with no bad effects whatever, and at last accounts, several months after treatment, she was well." In regard to this patient, Dr. J. Lambert, of Salem, N. Y., writes me that, after presenting symptoms of abdominal abscess for a while, she progressed favorably, and had no untoward symptoms during the following two years. During the past eighteen months she has been in Europe, and he has heard that she is in good condition.

Dr. E. V. Cushier²² writes: "In regard to the ultimate result of electricity in the case of extra-uterine pregnancy referred to, I do not think the case by any means a test one, as it is probable that the embryo was already destroyed by the rupture of the tube before the electricity was applied. . . . The electricity acted most favorably in hastening the resorption of the hematocele, if it did nothing else. . . . She completely recovered her health. Three years later there was again suppression of menstruation with symptoms of beginning pregnancy. At the end of two months from the time when menstruation should have appeared there was severe pain and a slight flow. Examination detected a small elastic tumor in the right broad ligament. Electricity was again resorted to. It was applied in six sessions. The tumor gradually disappeared. . . . Patient has been in excellent health since that time." This is, therefore, a case of recurring extra-uterine pregnancy in which electricity was employed on both occasions with good results. There is one other case on record—that of Landis²³—in which recurrence of the abnormal pregnancy took place years later, and in this case also electricity was successfully resorted to on both occasions.

Dr. E. V. Stoddard,²⁴ of Rochester, N. Y., writes in regard to his case, treated four years previously, as follows: "I reply

at once to question 1, Nothing! Two months after the operation no trace could be found, unless it were a slight apparent thickening of the tubal appendages. Absorption was very rapid. 2. Have not heard from her in over a year. . . . When last seen was perfectly well."

Dr. A. H. Briggs,²⁸ of Buffalo, N. Y., whose case was reported in 1885, briefly replies: "1. There were no secondary results of an alarming character developed. 2. The patient since her recovery has been in most robust health and is menstruating regularly. Being a near neighbor, I see her quite frequently."

After four applications of faradism, Aveling, of London, England, cured a case of extra-uterine pregnancy which he reported in 1886.²⁹ To my questions he answers: "1. My patient had no secondary dangers or trouble of any kind. 2. My patient is in perfect health, and was confined January 1st, 1889." This case was also seen by T. Spencer Wells, who writes me that there was no secondary danger, and that he saw the lady in the autumn of 1888, quite well.

Gardner,³⁰ of Montreal, treated a four months' growth by faradism. The lady, in a letter dated January 22d, 1889 (about three years later), states that she suffers pain, which keeps her weak, and that her menses continue two weeks at a time. The doctor informs me, however, that "the description she gives of her condition corresponds very closely with the account I got of her health for several years previous to the extra-uterine pregnancy."

The letter from Dr. A. H. Goelet³¹ is interesting. He says: "The case of extra-uterine pregnancy which I reported is now in perfect health and able to attend to her household duties. . . . 1. There have been no secondary dangers. 2. Present health as good as before. I saw her middle of last December" (two years after case was reported). "I treated her with negative galvanism through vagina, after fetus was destroyed by interrupted current, which caused complete absorption of everything. I have had one or two other cases since, which I have not reported, and which have done equally well. I did not report them because I did not call in any one to confirm my diagnosis."

Dr. Jacob Trush,³² of Cincinnati, Ohio, writes: "Ad 1. None

were apparent. *Ad 2. Good.* . . . When the case first came under observation the symptoms were markedly those of partial rupture of a tubal cyst, usual symptoms of pregnancy preceding. After treatment by electricity, great improvement, and finally shifting of the tumefaction from left side to centre. Three months later, discharge *per vias naturales* of a mummified ovum with fetus intact—development corresponding to about sixteen weeks' gestation. Supposition was that case had been one of interstitial pregnancy."

Dr. M. D. Mann,²³ of Buffalo, N. Y., writes: "The two cases which I have treated myself have both remained in perfect health since the electricity was used. No untoward symptoms of any kind have been noticed."

Dr. G. T. Harrison²⁴ writes: "With reference to your first question, I have to say that none of the patients treated by me has had any secondary complications. With reference to the second question, I reply that they were all well within a recent period. One of them was normally pregnant a year or more after treatment, and I had the opportunity of examining the remains of the gestation sac in the right tube, and there was still a perceptible enlargement there."

In regard to my own case,²⁵ treated in 1886, I can report that the patient has had no untoward symptoms or secondary dangers, and that I have attended her in two subsequent confinements.

My paper would not be complete without giving the present views—as far as I have been able to get them—of those who have employed this method from its first inception, and who, as consultants, have seen a great many of the cases treated. Dr. T. G. Thomas²⁶ is undoubtedly the one man whose fortune it has been to meet the largest number of these cases in America. In his letter he writes: "I have treated fourteen cases of extra-uterine pregnancy by electricity. Of these all recovered. In one case only did the dead fetal mass give trouble, and in that case all bad symptoms in time passed off and no operative procedure became necessary."

Dr. Thomas Addis Emmet has also seen many of the cases reported. He writes: "I have seen in consultation the greater portion of the cases of extra-uterine pregnancy which have been treated by electricity in New York, beginning with the

first case, and I do not know of a single instance where the result has been other than entirely satisfactory. I have had but a single case in my own practice, and the case was reported by Dr. Bache Emmet,³⁰ who was my assistant at the time, and under whose care I placed her. I examined her about eighteen months ago, and she was then in perfect health (about five years, I should think, after the pregnancy), and nothing could be detected but a small mass, about the size of an almond, which had become encysted, was free from pain on pressure, and gave her no inconvenience. Before the pregnancy she had a retroversion which it was difficult to manage. Since the pregnancy and her recovery the uterus has remained in position."

Dr. A. D. Rockwell saw quite a number of the cases and made the electrical applications. He writes me as follows: "1. In the thirteen cases of extra-uterine pregnancy that I have treated, in no instance have there been any unfavorable symptoms due to the electricity. 2. The condition of health subsequently of all the patients, so far as I am aware, has been good. Quite a number of these patients, however, I have never seen or heard from since recovery from their mishap."

Of course it is almost superfluous to state that many of these reports refer to the same case seen by several physicians at one time; but this fact really enhances the value of the reports. For the sake of convenience I have tabulated the fifty * cases which I have collected (and which I believe to be authentic), with the subsequent progress of twenty-five cases which were followed up for periods varying between one and eight years.

Of these fifty cases, I have not traced the further progress of the last eleven—which were chiefly reported during the past year—for the reason that I was interested in the subsequent histories of those cases which had been treated at least several years previously. I may state, however, that three ended fatally—two after electro-puncture, and in the third morphine followed by laparotomy was resorted to; the other eight were reported cured at the time. The cases treated by electro-puncture, the two fatal cases of Hicks and Janvrin,

* Although there are other cases on record, I have omitted them, owing to insufficient data and substantiation.

TABLE OF FIFTY CASES OF EXTRA-UTERINE PREGNANCY TREATED BY ELECTRICITY.
(Prepared from Published Reports and Private Correspondence.)

No.	Case of	Immediate or secondary dangers due to electricity.	Result of treatment.	Last seen or heard from.	Remarks.
1	Ischietti ³⁶	None (electro-puncture)	Recovery.. 3 months later.		Tumor reduced to size of pigeon's egg.
2	Hicks ³⁷	None.	Died.....		Puncture of cyst 5 weeks later caused death.
3	Allen ³⁷	"	Recovery.. 3 years later.		Tumor reduced to size of fist.
4	Allen ⁴⁰	"	"		Tumor reduced to size of goose egg.
5	Landis ⁴¹	"	" 4 years later.		Recurring extra-uterine pregnancy after 4 years; same treatment, with recovery.
6	McBurney ⁴²	"	"		Fetus discharged through uterus.
7	Reeve	"	"	Nearly a year later.	Small tumor left.
8	Harrison	"	"	Over a year later	Subsequent normal pregnancy; little enlargement left.
9	Lusk (1881)	"	"	Over 2 years later.	Two confinements since; small mass left.
10	Lusk (1885)	"	"	"	Hard, small body left.
11	Wilson ⁴³	"	"	"	Perfect health.
12	Billington	"	" 8 years later.		Mass left the size of an almond.
13	Emmel	"	" 5 "		Nothing left.
14	Garrigue	"	" 2 "		Perfect health.
15	Herrick	"	" 7 "		Complicated normal pregnancy; two confinements since; nothing left.
16	Westcott	"	" 7 "		Perfect health.
17	Rockwell ⁴⁴	"	" 5 "		Recurring extra-uterine pregnancy after 3 years; same treatment; nothing left.
18	Sims (1884)	"	" 5 "		Subsequent miscarriage; slight thickening left; troubled with old ovarian neuralgia.
19	Sims (1888)	Slight pelvic inflammation.	"	"	
20	Cushier	None.	" 2 "		
21	Cocks	"	"		

22	Lambert and Jones.	Symptoms of suppurative for a while.	Recovery.	12 years later.
23	Mundé	Temporary collapse.	"	2 "
24	Berlin	None.	"	4 "
25	Briggs	"	"	4 "
26	Stoddard	"	"	3 "
27	Garrigues	"	"	"
				5 months later.
28	Lusk	Inflammation and suppurative discharge of fetus and removal of placenta through vagina.	"	8 months' fetus; sac first aspirated.
		None.	"	
29	Goelot	"	"	2 years later
30	Aveling	"	"	3 "
31	Gardner	Alarming symptoms for a time.	"	3 "
32	Janvriu ⁴⁵	Internal hemorrhage after third Died. application.		
33	Petch ⁴⁶	None (electro-puncture).	Recovery	3 "
34	Trush	None.	"	3 months later
35	Van de Warker ⁴⁷	"	"	7 "
36	Chadwick ⁴⁸	Septicæmia; discharge of fetus through vaginal tear.	"	"
		None.	"	Several years
37	Mann (2 cases)	"	"	Over a year
38	Harrison	"	"	3 years later
39	Brothers	"	"	"
40	Taylor	"	"	"
41	Walker	"	"	"
42	Gabbin	Alarming symp. (electro-punct.)	"	"
43	Kletzsch	None.	"	"
44	Buckmaster	"	"	"
45	Duncan and Steavenson.	Died after electro-puncture	Died	"
46	Boulton and Steavenson.	"	"	"
47	Benton	None.	Recovery	"
48	Bierwirth	"	"	"
49	Edebohls	"	"	"
50	Wylie	Electricity discarded; fetus killed by morph.; septicæmia; laparat.	Died	"
				Complete absorption within 6 months.
				7½ months' fetus.

Excellent health; small tumor left.

Perfect health.

Perfect health.

Nothing left.

Fetus discharged through uterus 5 months later.

8 months' fetus; sac first aspirated.

Perfect health; nothing left.

Subsequent confinement; nothing left.

Troubled with uterine disorder of long standing.

Subsequent confinement; nothing left.

Fetus expelled from uterus 3 mos. later.

Nothing left.

Five months' growth.

Nothing left.

Nothing left.

Two subsequent confinements.

Tumor diminished in size.

Tumor diminished in size.

Tumor disappeared entirely.

Mass reduced in size.

Faradism followed by galvano-puncture.

Mass reduced in size.

Complicating typhoid fever; small nodule left.

Complete absorption within 6 months.

7½ months' fetus.

the three cases in which, under electricity, the fetus was expelled through the natural passages, and the two cases in which the fetus was discharged through openings in the vaginal roof, were likewise omitted. This left six * cases (reported cured) whose subsequent histories I was unable to trace. The list on page 124 shows the subsequent behavior of twenty-five cases observed for periods ranging between one and eight years after the employment of electricity.

Of these 25 cases, at least 14 were under observation for periods longer than three years. In 8 cases a thickening or distinct tumor is referred to as present at the time of the last examination; in 9 cases the local condition is not mentioned; and in the remaining 8 cases nothing was found. In Lambert's case the woman presented symptoms of suppuration, but these passed away in time and required no surgical interference. In none of the other cases did the tumor seem to cause the slightest inconvenience. In two of the cases (Landis and Cushier) a recurrence of the extra-uterine pregnancy took place years later; both were subjected to a repetition of the treatment, with a similarly fortunate termination. The condition of health of all these patients when last seen was quite satisfactory. Two of the patients (those of Cocks and Gardner) were reported as suffering from symptoms in no wise different from those they suffered for years previous to the extra-uterine pregnancy. Six of the women went through one or two subsequent normal pregnancies, and one suffered a miscarriage.

We can thus positively state that 25 patients (reported cured) have been heard from after the lapse of from one to eight years, and that when last seen all were reported well. Many of them still carried traces of the old trouble, and, while it would not be fair to assert that these little masses could in the course of time never become troublesome, still the fact remains that, as far as I have been able to discover, they have up to the present caused no inconvenience. In the experience of Dr. W. G. Wylie, two cysts which he removed from the abdominal cavity had been treated for extra-uterine pregnancy by other physicians. This proves that the diagnosis is always very difficult, but it is not asserted that any harm was done the patients by the electrical treatment.

* Cases of Allen, Lusk, Wilson, Rockwell, Sims, Van de Warker.

Whether electricity is to hold its place in the treatment of extra-uterine pregnancy, or not, will depend on the stand taken by the American profession; for in Europe it has hardly received the barest recognition. In this connection I cannot help quoting the following passage from a recent article by Dr. Malcolm McLean: "To show by a single example the baneful force of a one-sided view of surgical matters of vital importance, we have only to refer to a recent meeting of eminent obstetricians and gynecologists from various nations assembled in this hall. The subject of extra-uterine pregnancy was under discussion, and Prof. Martin, of Berlin, whose opinions are justly held in high estimation, asserted that it was his universal practice to perform laparotomy in every case; and, notwithstanding the unparalleled records of the American method of treatment by electricity, not a voice of dissent was raised, I believe, in all that assembly. Certainly no adequate rebuke to such a wholesale dismissal of our claims for electricity was offered. And who can tell the far-reaching influence of such teaching? Shortly after, a primary-operation case of extra-uterine pregnancy was presented by one of our number, and with loud denunciations he spurned as triflers and ignoramuses those who presumed to claim that electricity ought to have even a trial on its merits."

From a careful study of the facts which I have had the honor of presenting to you, I believe I am justified in drawing the following conclusions in regard to the use of electricity in extra-uterine pregnancy:

1. The risk of rupturing the sac of an extra-uterine pregnancy and causing death by internal hemorrhage is slight. In but one case has this possibly occurred (Janvrin), but the reporter himself thought that the damage existed prior to the employment of the electricity.

2. Suppuration of the dead fetal mass has not occurred in any case in which electricity was employed before the third month.

3. Beyond the third or possibly fourth month electricity should not be resorted to.

4. Electro-puncture is to be condemned in all cases.

5. In cases of mistaken diagnosis no harm is done by the electrical treatment.

6. Under galvanism or faradism early extra-uterine pregnancies can be checked in their growth and caused to disappear entirely or to become shrivelled up. These remaining masses have thus far caused no subsequent trouble.

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VARIETIES AND CAUSES OF EXTRA-UTERINE PREGNANCY.¹

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IN considering the causes and varieties of extra-uterine pregnancy, it is necessary to investigate some of the more plausible theories and peculiarities of the phenomena of ovulation and impregnation in the human female.

The following theories are generally accepted :

1. That the mature ovum, under normal conditions, is discharged from the Graafian vesicle at the catamenial period.

2. That the ovum is ordinarily taken up by, or finds its way into, the fimbriated extremity of the Fallopian tube, passing through the latter to the cavity of the womb, there to await further development or disappear with the menstruum.

3. That the ovum may be impregnated shortly before its escape from the Graafian vesicle, or soon after, or within the Fallopian tube, or after its appearance within the uterine cavity.

4. That both the sterile and the fertilized ovule may be (a) arrested at any point in its course through the tube, where it may be absorbed or developed, as the case may be; or (b) it may drop into the peritoneal cavity, there to meet the same fate; or (c) a fecundated ovule may traverse the pelvic peritoneal space and enter the tube of the opposite side, either to be arrested within its canal or to find its way into the uterine cavity.

5. It is declared possible by some that the ovum, after its arrival in the corporeal cavity, may, in certain instances, not remain there, but proceed onward and enter the opening of the opposite tube, and, becoming fixed there, develop either within the tube or the substance of the uterus. This appears to be far-fetched, but it may be none the less not impossible.

6. The Fallopian tube on the side of the discharged ovule may be momentarily or permanently paralyzed, either from

¹ Read before the Cincinnati Obstetrical Society, June 6th, 1889.

pressure or disease or adhesions, or the lumen of the tube may be occluded from various causes ; in either of which cases the opposite tube, if healthy, may have the power to reach over and arrest the escaping ovule. This, too, appears more fanciful than real. However, if the tube, with its infundibular extremity, can approach and adjust itself to the ovary of its own side, so as to receive the ovum when it departs from its origin, it is possible for it to so dispose itself as to take up one from the other side.

Until recently these phenomena were accepted by the majority of writers on, and investigators in, embryology. Lawson Tait, however, denies that, in the human female, the male fecundating element penetrates beyond the uterine cavity, and asserts that consequently the male and female germs meet in the cavity of the uterus. At present I am not aware that the presence of the spermatozoa, either within the Fallopian tube, at its distal extremity, or upon the ovary, has ever been actually demonstrated in the human female. But the experiments and observations of Hausmann, Nuck, and others upon the lower animals have been found sufficiently convincing, and the theory that the spermatozoa do the same in the human female is accepted not only as highly probable, but it is the one theory according to which the phenomena of extra-uterine pregnancy can be satisfactorily explained. If the ovum is able to find the route designed for it by nature, it is not unreasonable to assume that the male germ may enter the tube and approach the ovum. That the latter has the power and inclination to move upward is amply proven by the well-established fact that pregnancy has taken place after the deposit of the semen merely within the vulvar vestibule. It is questionable whether the cilia of the epithelial lining of the tube have sufficient power to refuse entrance to the germ. But of this later on ; for the present let us consider :

(a) What is the condition of the ovum at the time of its discharge from the ovary ? The ovum consists of a dense outer membrane, the zona pellucida of Baer (vitelline membrane). This encloses the yolk which contains the germinal vesicle with the germinal spot of Wagner. The whole ovum measures at this period of development less than one one-hundredth of an inch in diameter. In its earliest stages the ovum

is surrounded by a granular, albuminous mass derived from the discus proligerus, in which it is embedded. The vitelline membrane is covered by numberless non-vascular villi (false villi). Segmentation, which is complete about the eighth day, may take place in the fecundated as well as in the unfecundated ovum, in which latter case development ends here, and the ovum disappears either by absorption or with the menstrual discharge. If fecundated, the area germinativa, with its light and dark space, and presenting the primitive trace, becomes visible. Up to this time, and until the formation of the allantois (about the end of the tenth day), the ovum receives no nourishment from the mother, but lives and develops entirely upon the resources of its own composition. This proves that death of the fecundated ovum is apt not to take place prior to the tenth day—an important point in the history of extra-uterine pregnancy.

(b) May the ovum live and grow in or upon structures of the body other than those intended for it by nature? If so, what may those structures be? If by any chance the fertilized ovum fails to reach the uterine cavity, one of two things occurs: either the ovum dies and is absorbed, or it engrafts itself wherever it may happen to be at the time the chorion is formed. Mucous membrane is undoubtedly the most favorable soil for the life and maintenance of the ovum, whereas serous membrane is decidedly unfavorable owing to its absorptive character. Lawson Tait's view is that the peritoneum always absorbs ova dropped into it, whether they be fecundated or not. This view I would unhesitatingly accept but that I am convinced of the fact that primary abdominal pregnancy has been proven to exist. I shall recur to this later. It is reasonable to conclude that the ovum will develop whenever and wherever it is possible for it to secure contact with the maternal circulation, whether this be within or upon the ovary, within the tube or substance of the uterus, or upon any portion of the peritoneum; and the assumption is that it is least likely to take place primarily upon the ovary or within the peritoneal cavity.

Knowing the condition of, and changes within, the ovum up to the tenth and eleventh day, we recognize the fact that up to that period it exists more or less independently, and that under

normal conditions it migrates in a certain definite direction. Under abnormal conditions, however, its course may vary or be interrupted or arrested altogether; or, again, it may develop in parts commonly regarded as foreign to it; and finally, after the allantois has formed and the communication between the fetal and maternal circulation is established, development may go on to different periods of gestation, these periods varying according to the structure within or upon which it has planted itself. I have seen it stated (Braithwait¹) that the ovum has the power to change its location, even after the formation of the placenta; that the latter may become completely detached and again attach itself. Thus during the earlier months the ovum may migrate for an indefinite period until at length it finds a spot that will furnish ample nourishment for its growth. This, it must be confessed, seems highly improbable, at least after the placenta has once formed. It is easily understood that, for want of sufficient maternal blood supply, the ovum may detach itself; when once detached, however, asphyxia would in a very short time inevitably cause the death of the ovum, and this long before the placental reattachment, no matter how vascular the region selected might be.

(c) What is the variation in the extent and form of development of the ovum in the different regions? The coverings of the ovum in extra-uterine development depend upon its site. Decidual membrane is probably present in the tubal, interstitial, and intra-ovarian varieties. It has been claimed that an attempt at the formation of decidua reflexa may exist in the abdominal form, but is confined to the region of attachment, the rest consisting of nothing but the vitelline membrane and the amnion. The former, however, becomes very dense and assumes the same glistening appearance as the peritoneum. This explains, perhaps, why adhesion does not occur between the gestation sac and the abdominal and pelvic viscera except at the placental site. The word decidua is not employed here in the usual sense—namely, a something to be cast off with the birth of the child—but rather as designating an additional protective covering furnished to the ovum by structures upon or within which it grows. Thus in the case of tubal pregnancy it

¹ British Med. Journal, January 3d, 1885.

would consist not only of mucous membrane, but of structures of the tube more or less; in true ovarian, of the structures of Graafian vesicle; in the interstitial, of the substance of the uterus; in the abdominal, of the thickening of the peritoneum induced by irritation due to the presence of the ovum.

Varieties and Causes of Extra-uterine Pregnancy.—Preparatory to writing this article I reviewed carefully the work of J. S. Parry ("Extra uterine Pregnancy: Its Causes, Species, etc."), of Lawson Tait ("Lectures on Ectopic Pregnancy," 1888), of John Strahan ("Diagnosis and Treatment of Extra-uterine Pregnancy," Jenks Prize Essay, Philadelphia, Pa., 1889), also the obstetrical works of Leishman, Cazeaux and Tarnier, Spiegelberg, Winckel, and Hodge. Lack of time and opportunity alone prevented my consulting other authorities. I believe, however, that the ones here quoted contain the gist of all that is known upon the subject.

There is an apparent though not very serious want of harmony among authors regarding the recognition and classification of the various forms of ectopic gestation; which, however, is no easy matter, since it is very difficult, even after close study and personal observation and a careful consideration of the evidence furnished, to arrive at a satisfactory conclusion concerning the same. By far the best given is Lawson Tait's, though it is not free from bias, owing to his views concerning the pathology of the subject. As might be expected, all authors speak from their own standpoint. Some are guided by their knowledge of anatomy and physiology alone; others from a limited personal experience with, and observation of, cases; while still others have gathered statistics and investigated the character of all cases they could collect from previous writers, from museums and post-mortem rooms. My experience is limited to two cases, in which Prof. C. D. Palmer was the operator and myself the assistant. One was abdominal, with fully developed child, thirteen months' gestation; the other was tubo-interstitial, five months' gestation.

From the nature of things it is evident that the experience even of the most favored is limited. The experience of Lawson Tait (who up to this time reports having seen and operated upon seventy-eight cases of extra-uterine pregnancy)

is unique. Indeed, his experience is so unusual that it stands unrivalled in the annals of medicine.

Let us now consider a few of the different divisions of extra-uterine pregnancy given by some of the older as well as by more recent authorities :

DEZEMERIS.	<div><div>1. Ovarian pregnancy.</div><div>2. Subperitoneo-pelvic pregnancy.</div><div>3. Tubo-ovarian pregnancy.</div><div>4. Tubo-abdominal pregnancy.</div><div>5. Tubal pregnancy.</div><div>6. Tubo-uterine-interstitial pregnancy.</div><div>7. Utero-interstitial pregnancy.</div><div>8. Utero-tubal pregnancy.</div><div>9. Utero-tubo-abdominal pregnancy.</div><div>10. Abdominal pregnancy.</div></div>	<p>By 2 is meant the "broad ligament," "br. extraperitoneal" of Tait. By 6 the author, no doubt, implies a primary tubal within uterine portion of the tube, with secondary involvement of the uterine wall; and by 7 that form which is developed purely within the wall, into which the ovum is said to escape through an ulceration in tube, or open sinus within the corporeal cavity.</p>
HODGE.	<div><div>1. Ovarian pregnancy.</div><div>2. Tubal "</div><div>3. Interstitial "</div><div>4. Abdominal "</div></div>	<p>This author considers all subdivisions as needless and confusing; that they are merely modified conditions of one or the other variety of extra-uterine pregnancy.</p>
CAZEAUX and TARNIER.	<div><div>1. Abdominal pregnancy.</div><div>2. Tubo-abdominal pregnancy.</div><div>3. Tubal pregnancy.</div><div>4. Interstitial tubo-uterine pregnancy.</div><div>5. Utero-tubal pregnancy.</div></div>	<p>C. and T. consider the intra- and extra-ovarian variety under abdominal gestation.</p>
PARRY.	<div><div><div>1. Tubal.</div><div>2. Ovarian.</div><div>3. Abdominal.</div></div><div><div>Tubal pregnancy.</div><div>Tubo-abdominal "</div><div>Tubo-ovarian "</div><div>Tubo-uterine "</div><div>Ovarian "</div><div>Ovario-tubal "</div><div>Primary "</div><div>Secondary "</div></div></div>	<p>In this division the utero-tubo-abdominal and the subperitoneo-pelvic were omitted.</p>

STRAHAN follows Tait faithfully.

LEISHMAN.	1. Ovarian.	{	Extra-ovarian	} Does not differ much from Parry.	
			and Intra-ovarian pregnancy		
	2. Abdominal.	{	True abdominal		“
			Extra-ovarian		“
	3. Tubal.	{	True tubal		“
			Tubo-ovarian		“
			Tubo-abdominal		“
Utero-tubal			“		
TAIT.	1. Ovarian (possible but not proved).	{	See below, comparison between Tait and Dezeimeris.		
	2. Tubal.		{	Abdominal or intraperitoneal pregnancy.	
					Broad-ligament or extraperitoneal pregnancy.
	3. Tubo-uterine or interstitial pregnancy.				

Tait and Strahan dispose and speak of the investigations and research of the older writers as unreliable because "they are so old," and that "their descriptions of supposed facts require to be received with many grains of salt." Both admit that the work of Dr. Wm. Campbell, of Edinburgh (1842), and that of John S. Parry, of Philadelphia, Pa., 1887, are the ablest heretofore published, and that they contain about all that was known of the subject up to that time; but since then, says Strahan, "it began to develop rapidly through Tait's wonderful success in abdominal section," etc., and that Tait "years ago arrived at the position he now occupies, purely upon brilliant and inductive reasoning."¹ This would imply that all compilers, thinkers, and investigators have been and always will be of little value. If we examine critically the classifications of the authors tabulated above, we will find that Tait's arrangement, while clear and intelligent (and for this everybody will give him credit), contains in reality all (except the tenth) of Dezeimeris. A comparison between these two authorities will prove this statement:

<i>Dezeimeris'.</i>	<i>Tait's.</i>
1. Ovarian.	1. Possible but not yet proved.
2. Subperitoneo-pelvic	2. Broad-ligament or extraperitoneal gestation.
3. Tubo-ovarian.	3. I am free to accept a subvariety of the ovario-tubal as a possibility.

¹ Strahan's Prize Essay, 1889.

4. Tubo-abdominal. }	4 and 5. Class <i>a</i> and Class <i>b</i> of Tait's.
5. Tubal. }	
6. Tubo-uterine interstitial. }	6 to 9. Tubo-uterine or interstitial.
7. Utero-interstitial. }	
8. Utero-tubal. }	
9. Utero-tubo-abdominal. }	
10. Abdominal.	10. Abdominal or intraperitoneal gestation.

To see whether this comparison is correct and just, you may decide for yourselves by the following quotation of Tait's "Scheme of Ectopic Gestation":

"1. Ovarian, possible but not yet proved.

"2. Tubal, in free part of tube, is (*a*) contained in tube up to fourteenth week, at or before which time primary rupture occurs, and then progress of gestation is directed into—

(*b*) Abdominal or intraperitoneal gestation, uniformly fatal (unless removed by abdominal section), primarily by hemorrhage, secondarily by suppuration of the sac and peritonitis;

(*c*) Broad-ligament or extraperitoneal gestation;

(*d*) May develop in broad ligament to full time and be removed at viable period as living child;

(*e*) May die and be absorbed as extraperitoneal hematocele;

(*f*) May die, and the suppurating ovum may be discharged at or near umbilicus, or through bladder, vagina, or intestinal tract;

(*g*) May remain quiescent as lithopedion;

(*h*) May become abdominal or intraperitoneal gestation by secondary rupture.

"3. Tubo-uterine or interstitial is contained in part of tube embraced by uterine tissue, and, so far as is known, is uniformly fatal by primary intraperitoneal rupture (as *b*) before fifth month."

Dezeimeris, it must be confessed, is too elaborate and not altogether right in his classification. The number of cases he observed is not so great as that of Tait; but so far as ability, faithful examination into cases, post-mortem observations, and actual knowledge are concerned, comparison will show that, notwithstanding the disadvantages of the time at which this

author lived and worked, there is virtually but little difference in their classification. And it is not at all unlikely that Mr. Tait's "brilliant and inductive reasoning" upon this subject received its first impulse through the labor of Dezeimeris. According to Parry ("Extra-uterine Pregnancy," 1878, p. 32), until the year 1824 the tubal, ovarian, and abdominal varieties of extra-uterine pregnancy were generally admitted. Subdivisions were made first by Dezeimeris in 1837, and, though some of his reasons are no longer tenable, the different varieties given by him are accepted more or less by nearly all subsequent writers; and the fact that Mr. Tait never observed a case of ovarian or primary abdominal pregnancy is no sufficient reason for the non-acceptance of them as a class simply and solely because he never came in contact with them.

I have given Dezeimeris' classification as published by Cazeaux and Tarnier, and Tait's as published by himself in his "Lectures on Ectopic Pregnancy," etc., 1888. There is a difference between Tait and all previous authors; but, with the exception of the ovarian and abdominal forms, it is a difference in words and arrangement only, without serious distinction in kind and character. Strahan and Tait both, as before stated, seem to have little faith in earlier writers, but neither hesitates to cite Velpeau, Arthur Farre, and Mayor in his own support. In their opinion, ovarian pregnancy never occurs. If Tait's theory of impregnation is correct, that, "*save in abnormal conditions of the tubes, spermatozoa never penetrate further than the uterus*," it appears to me that extra-uterine fetation would never take place, for the following reasons:

1. Diseased tubes which would facilitate the passage of the germ imply a condition which renders the tubes patulous throughout, in consequence of which the spermatozoa would obtain a ready entrance.

2. Tubes so affected would certainly as readily admit of the passage of an ovum, impregnated or otherwise, and thus rather tend to prevent than cause ectopic gestation.

3. Is it not much more reasonable to suppose that the disease present or previously existing in the tubes would have a tendency to destroy rather than promote the life and union of the male and female elements?

Mr. Tait supports his theory as follows: "The uterus alone

is the seat of normal conception; as soon as the ovum is affected by the spermatozoa, it adheres to the mucous surface of the uterus; the function of the ciliated lining of the Fallopian tubes is to prevent spermatozoa entering them, and to facilitate the progress of the ovum into the proper nest; further, the plications and crypts of the uterine mucous membrane lodge and retain the ovum either till it is impregnated or till it dies or is discharged. With such views, it is easy to understand the cause of tubal pregnancy, for we have only to turn to the paper of Arthur Johnstone and Bland Sutton to see that desquamative salpingitis could at once put the mucous lining of the tube into a condition exactly similar to that of the uterus, and in that condition access of the spermatozoa would be possible, retardation of the ovum in the tube would be inevitable, and its immediate adhesion to the tube wall after impregnation would be as easy and as likely as its occurrence in the uterus."¹ This is a very plausible theory, "but not yet proved."

That the cilia of the tubal epithelial membrane serve as a barrier to any foreign element we all accept as true. The function of the spermatozoa, however, must not be forgotten. Their specific prerogative is to seek the ovum, wherever it may be deposited or whatever course it may determine for itself. Is not the oviduct in the lower animal lined with ciliated epithelium? "Desquamative salpingitis" is good so far as it goes, but has it been proven that normal pregnancy cannot take place after the destruction of the cilia? Is the ciliated epithelium the only power that propels the ovum onward to the uterine cavity? Is it proven that in every case of ectopic gestation desquamative salpingitis was present, or that it existed previously? Is it not possible that in those cases of tubal pregnancy which were examined by Virchow and Mr. Tait, the changes observed upon the mucous membrane of the tube might not have been produced by the developing ovum itself? Does an intra-uterine pregnancy not change the mucous membrane of the womb so completely that it seems almost impossible that such an alteration could occur? Is it unreasonable to suppose that the mucous lining of the tube would not follow here the same law as it does in the uterus? And if so,

¹Tait's "Lectures on Ectopic Pregnancy," 1888, p. 4.

the absence of the ciliated epithelium would be the result rather than the cause of the aberrant gestation.

Mr. Tait is very exacting concerning the testimony furnished by others in support of their opinion, in case they differ from his own. Thus he rejects Spiegelberg's case of ovarian pregnancy because the ovarian elements were not spread over the whole sac; though he "frankly admits that the eminence of the observer and the manifest care with which all his records are given make it quite possible that his conclusions are correct" (pages 10 and 11 Tait's "Lectures on Ectopic Pregnancy"). On page 59 of the same book he disposes of Mr. T. R. Jessop's case of abdominal pregnancy in a similar manner. "If," he says, "he [Jessop] had said intraperitoneal variety, his language would have been more accurate; but as a matter of fact it stands by itself, and may, therefore, be known as *the* case of intraperitoneal ectopic gestation."

It is difficult for Mr. Tait to believe in ovarian and abdominal pregnancy, but it is easy for him to understand¹ how pregnancy, originally tubal, may be completely extruded from the tube; that the tube may contract and heal, and that a secondary and wholly intraperitoneal gestation may thus be formed, as in the remarkable case recorded by Maticki (*Monatsschrift für Geburtshülfe*, May, 1860), where the uterus and its appendages could all be traced, and where the attachment of the placenta had become almost wholly omental. On the same page he continues: "An ovarian tumor may be twisted off its pedicle and grow entirely from the omentum, or, as I have seen, from the ascending colon." In another place he agrees with Braithwait that the ovum may migrate and change its place repeatedly, even after the placenta has formed. How it is possible for a man to believe all this, and still refuse to recognize the occurrence of ovarian and abdominal pregnancy, is not quite comprehensible. The experiments of Nuck upon the bitch go far to substantiate the researches of Hausmann, and the frequency with which extra-uterine pregnancy is now known to occur in the human female leaves but little doubt as to the possibility and probability that the male element makes its way up through the tube to the ovary as easily

¹ Tait's "Lectures on Ectopic Pregnancy," page 15.

as the ovum secures passage through it from the ovary to the cavity of the womb.

John S. Parry, in his admirable work on "Extra-uterine Pregnancy," also quotes the classification of Dezeimeris, and, passing upon it, says: "The location of the ovum is sufficiently explained by the names in the first" (ovarian), "third" (tubo-ovarian), "fourth" (tubo-abdominal), "fifth" (tubal), "and tenth" (abdominal) "species." Just why he discarded the interstitial and subperitoneo-pelvic varieties as superfluous, when he admits the abdominal, is not sufficiently explained by the passing notice he devotes to them. But what is still more of a surprise is that, after so thorough and painstaking labor and research to simplify and reduce the number of species, he himself gives us three species subdivided into eight depending varieties. This subdivision does not contain the subperitoneo-pelvic nor the utero-tubo-abdominal of Dezeimeris, both of which have occurred with apparent certainty and cannot and ought not to be excluded without good reason from any classification, as will be proved later on.

Others who have confined themselves to three or four species—like Hodge, for instance—simply do not do justice to the subject. Whatever the attempts at simplification and reduction in the number of varieties of extra-uterine pregnancy have been since Dezeimeris wrote, we must confess that we have almost as many different forms to-day as then. The only difference—and this is perhaps an advantage—is that we now have a number of primary species with more than treble the number of secondary varieties. After considering the merits of the several divisions as given by the various authors mentioned, my object now is to bring into a harmonious whole the classifications of the various errant gestations. That this will be beyond criticism I do not for a moment imagine; but it appears to me that it is not just to exclude from classification one or the other variety of dislocated ova because one has never seen such a case himself; or because he is inclined to doubt the validity of certain testimony given in favor of this or that class, on the ground that the authority is "so old" or perhaps has not had a sufficient number of cases under observation to entitle him to credence.

For this reason, and from the position taken in the intro-

duction, I have formulated the following arrangement of the various possible forms of extra-uterine fetation :

<i>Primary species.</i>	<i>Subdivisions.</i>
1. Ovarian.	<div> <div>{</div> <div>1. Intra-ovarian pregnancy.</div> <div>2. Extra-ovarian "</div> <div>3. Ovario-abdominal "</div> <div>4. Ovario-tubal "</div> </div>
2. Tubal.	<div> <div>{</div> <div>5. True tubal "</div> <div>6. Tubo-abdominal "</div> <div>7. Tubo-ovarian "</div> <div>8. Tubo-ovario-abdominal "</div> <div>9. Subperitoneo-pelvic "</div> </div>
3. Interstitial.	<div> <div>{</div> <div>10. True interstitial "</div> <div>11. Utero-abdominal "</div> <div>12. Utero-tubal "</div> <div>13. Utero-tubo-abdominal "</div> </div>
4. Abdominal.	<div> <div>{</div> <div>14. Extraperitoneal hematocele.</div> <div>15. Intraperitoneal "</div> </div>

1. Ovarian pregnancy, notwithstanding the objections raised against its probability by Mayor, Velpeau, Arthur Farre, Tait and his followers, has still, according to Parry and Strahan, the weight of authority in its favor. Every author of a text-book on obstetrics who treats of erratic gestation at all does not hesitate to describe cases of this kind, and to cite instances of their own observation or from those of others which sustain its actual occurrence. Strahan refers to cases given by Coste, Hecker, Kiwisch, Puech, Duverney, Goupil, Freund, and P. U. Walter as difficult to reject, and quotes in particular the case of Cargill, of Jamaica, who "found the placenta of a five-months fetus embedded in a ruptured, cystic ovary"; but is disposed to yield to Tait's view that, even in this instance, the evidence is not convincing, because, according to Dr. James Braithwait, of Leeds (*British Medical Journal*, 1885), we know that in extra-uterine cases the placenta can migrate, change its ground, spread here and there from its original attachment, or may even be detached altogether and take root again.

It appears much more probable as well as possible that an ovum may be impregnated within its capsule, or that it

may engraft itself upon the outer surface of the ovary, or upon the peritoneum even, than to accept Braithwait's observation as an absolute fact.

After what has been said it is needless to dwell further upon the ovario-abdominal and ovario-tubal varieties of gestation. The terms imply that the ovum began to develop in or upon the ovary, and subsequently, either by rupture of the sac, or growth of the placenta, or inflammatory adhesions, involved the tube or the peritoneum proper, or both, as the case may be. Ovarian pregnancy in either form is, it must be remarked, comparatively rare, and is usually of from four to five months' duration.

2. Tubal pregnancy is the most frequent form of errant gestation, and is accepted as such by all who have written upon the subject. Parry states that in 500 cases of ectopic pregnancies collected by himself, it occurred 214 times; 149 developed in the tube proper, 34 in the pavilion, and 31 in the uterine portion of the tube. Of the remaining, 27 were ovarian, 29 abdominal, and 230 doubtful. Tait's remarkable experience has led him to believe that every dislocation of the ovum is tubal in character, and that every other variety is consequent upon this. It will be admitted that this author is perhaps too dogmatic in his views.

In the above classification we have under tubal four subdivisions. The *tubo-abdominal* results from a yielding of the structures of the tube in the direction of the peritoneal cavity. The *tubo-ovarian* is also regarded as a legitimate form. Even Tait is willing to recognize it. In this instance, of course, the ovary is implicated secondarily, probably because it was adherent to the tube. The *tubo-ovario-abdominal* is simply a continuation of the former, the peritoneal cavity participating in the development of the ovum. Thus a tubal pregnancy affects the tube alone primarily; but in its course of development, by rupture or otherwise, may invade first the ovary, then the peritoneum, or *vice versa*. The *subperitoneo-pelvic* (first described by Dezeimeris) is certainly entitled to a special name. Though Dezeimeris did not give exactly the manner of its occurrence, he nevertheless was the first to describe the presence of the generative product between the folds of the broad ligament. No one can successfully controvert here the

views of Lawson Tait, who claims that it is the result of a rupture of the tubal tissue in the direction of the folds of the broad ligament, and I do not see why the term "intraligament gestation" of Tait should not be used instead of subperitoneo-pelvic.

3. *Interstitial pregnancy* includes the *utero-tubal*, *utero-abdominal*, and the *utero-tubo-abdominal*. It appears, from the evidence to be gained by the perusal of the authorities quoted, that the interstitial form of errant fetation has been proved to occur, and also that it does so less frequently than the tubal, but oftener than the ovarian.

The explanation offered as to its occurrence is that the ovum is arrested within that portion of the tube passing through the substance of the womb; that by rupture and subsequent closure of the tube it becomes purely interstitial; or that the ovum may escape into the parenchyma of the uterus "through an open sinus [?] or through an ulcerated portion in the tube [?]." I am inclined to think that the first explanation is the most plausible. Dezeimeris (*Journal des Connoissances Medico-Chirurgicales*), Burns, Partuna, Hunter, Hoffmeister, and Velpeau (Cazeaux and Tarnier), all furnish examples of this kind of ectopic fetation.

Interstitial pregnancy produces *utero-abdominal* gestation whenever the uterine tissues yield to the developing ovum in the direction of the abdominal cavity; and if the coverings of the fetal sac should rupture at the same time, or hemorrhage ensue, an intraperitoneal hematocele would be the consequence. But if the placenta formed near or upon the mucous membrane of the uterus, and the fetal sac implicated not only the uterine tissue but also the portion of the tube confined within the uterine wall, upon the yielding of the tissues enveloping the ovum in the direction of the peritoneal cavity the ovum might lodge within the abdominal cavity, while the cord passed through the ruptured uterine wall and tube. This would constitute the so-called *utero-tubo-abdominal* variety of extra-uterine gestation.

4. *Abdominal or ventral pregnancy*, like ovarian gestation, is not believed in by many writers (Mayor, Velpeau, Arthur Farre, Tait, and others), for reasons already stated. From what has been said in reference to the views taken upon this

form of ectopic pregnancy by most authors, but especially by Campbell, Parry, and Strahan, it would seem that the possibility of its occurrence cannot be questioned. The objections urged by Tait are deserving of great consideration, but they do not prove that it is impossible for an ovum to live and grow upon the peritoneal surface. Therefore I have deemed it neither just nor advisable to exclude the abdominal variety of extra-uterine pregnancy from the arrangement given above.

Some may object to subdivision 15, hematocele. However, this may be (and, according to Tait, it frequently is) a secondary result of ectopic gestation, and a consideration of the varieties of errant pregnancy would not be complete without reference to their possible, nay, probable occurrence. Nothing is more obvious than that, in an early rupture of any form of extra-uterine pregnancy involving the whole structure of the fetal sac, the then soft embryo may easily break down and be lost in and absorbed with the hematocele produced by the rupture. When accident forces the contents of the ovum and attending hemorrhage into the peritoneal cavity, we have an intraperitoneal hematocele; if, as in the tubal variety, they are forced between the broad ligament, we have an extra- or subperitoneal hematocele. The observations upon frozen specimens by Drs. D. Berry Hart and J. T. Carter go to support the opinion of Dezeimeris and, later on, the views of Lawson Tait, that the *subperitoneo-pelvic* variety of the former and *intraligament* form (meaning the same) of the latter exist and must be recognized.

Causes of extra-uterine pregnancy are, to say the least, very obscure. The following is a *résumé* of all the causes given by the authors cited above:

1. *Terror* and *shock* coinciding with time of fecundation.
2. *Blows* upon the abdomen a short time after fruitful coition.

Both of these are justly looked upon as doubtful, since it will never be proved whether or not they can produce a dislocation of the ovum.

3. *Malformation of the tube*; *paralysis* or spasm of the same; *defective or excessive length* of the tube; *engorgement, swelling, and ulceration* of its mucous membrane; *hardening and retraction* of the fimbriated extremity, as well as *obliteration*

tion of the tube within the uterus, all are quoted by Tarnier as observed by himself, Smellie, De Ferre, Mayor, Schmidt, Menier, and Gaide.

4. *False passages leading to Fallopian tube or ovary.*—Tarnier cites the experiments of Gartner, of Copenhagen, who discovered a number of canals leading to the oviduct, in the hog, cow, etc., which offered passage to the spermatozoa. Dr. Blainville, who searched for these canals in women, found none. But Tarnier thinks it probable from analogy, especially on account of the cases reported by M. Baudelocque, 1826, Dulaurens, De Graaf, and Mad. Boivin. All of these authors claim to have observed division and bifurcation of the Fallopian tube within the uterine wall, a drawing of which may be found in the American edition of Cazeaux and Tarnier, 1886. The same author refers also to M. S. Richards' anomalous case of supernumerary pavilions.

5. *Inflammatory processes* within the pelvic cavity, and *pressure* upon the tube created by swelling or morbid growths, may so obstruct the lumen of the tube as to make the passage of the ovum impossible after a certain time.

6. *Desquamative salpingitis* (Virchow and Tait) is an exceedingly ingenious as well as plausible theory, and may not be an infrequent cause of the arrest of the ovum.

LAPARATOMY FOR INTESTINAL OBSTRUCTION FOLLOWING VAGINAL HYSTERECTOMY.¹

BY

HENRY C. COE, M.D.

THE following brief report of a case illustrating this rare complication will serve as an introduction to the paper:

Mrs. B., æt. 29, was referred to me by Dr. Fordyce Barker. She had been married twelve years and had borne four children. Three months before, she began to have irregular hem-

¹ Read at a meeting of the New York Obstetrical Society, held October 15th, 1889.

orrhages, and a month later a watery discharge accompanied by severe backache. Her health deteriorated rapidly. When these symptoms became more marked, her husband, a physician, made an examination and discovered a cauliflower excrescence on the anterior lip of the cervix uteri. He brought her to New York from the South, and I saw her for the first time on June 12th, 1889, and again with Dr. Barker two days later. We found a large epitheliomatous mass, which bled easily, involving both the anterior and posterior lips, but confined to the cervix, the broad ligaments being apparently unaffected. Microscopical examination of a portion of the growth confirmed the diagnosis. The patient's general condition was poor. As a radical operation was desired, she was advised to enter the Cancer Hospital in order to undergo vaginal extirpation of the uterus. She was admitted to my service on the 17th, and was operated upon two days later. The prognosis was somewhat doubtful, owing to the presence of albumin and casts in the urine.

I operated June 19th, assisted by Dr. Hawley. I removed the uterus with the adnexa, the operation occupying about forty minutes. The uterus being retroflexed and adherent, and the cervix very soft and friable, I experienced considerable difficulty. There was an ovarian cyst as large as a Messina orange on the right side, which was punctured and removed. No ligatures were used, two pairs of compression forceps being applied to each broad ligament and two pairs to bleeding points in the sacro-uterine folds. The peritoneal wound was left open, the vagina being tamponed with iodoform gauze. The patient bore the operation well and was able to take nourishment from the first. The forceps were removed at the end of forty hours, soon after which the temperature rose to 101° , and there was moderate distention of the abdomen without pain. The patient passed a normal quantity of urine, containing only a trace of albumin and no casts. The usual calomel triturates and sulphate of magnesia were administered in the evening, followed by an enema given through a large, flexible tube; the enema was repeated the next morning, bringing away a few scybalous masses. On the fourth day the temperature rose at one time to 101.4° , though the pulse seldom exceeded 100. The patient was quite restless and complained of the distention; this was most marked in the right iliac region, where the outline of a distended loop of intestine could be seen. There was no pain or tenderness on palpation of the abdomen. In the afternoon she vomited some greenish fluid, but continued to take nourishment and stimulants regularly. No flatus was passed per anum. My suspicions that there was an intestinal obstruction, which had been entertained from the first, were now so strong that I considered the advisability of

performing laparotomy. I judged that a coil of small intestine was adherent to the edge of the peritoneal wound on the right side. However, the patient's general condition was good, she had no pain, and there were no evidences of peritonitis; so that I hesitated, especially as I was unable to obtain counsel and assistance that night, my colleagues being all out of town. I inserted my fingers into the wound and tried to reach the peritoneal cavity; but the peritoneal wound had closed, and I feared to introduce infection from the sloughing tissue around the edge of the vaginal opening. There was also some danger of exciting hemorrhage, as no ligatures were used. One-eighth of a grain of elaterium was ordered, to be repeated in four hours if necessary; it had no effect, but gave no discomfort. During the night the patient's condition improved so much that when Dr. Barker saw her with me the next morning he did not think it advisable to operate then. Her temperature was 99.4° and her pulse 90, while the distention was less. She chewed a piece of steak and took a considerable amount of liquid nourishment, having no nausea and little, if any, discomfort. Dr. Barker advised against the continued administration of laxatives. I gave a large enema, containing a pint of molasses, passing in the tube at least eight inches; the enema was retained, but brought away nothing except mucus and a small amount of fecal matter from the large intestine. During the day her pulse and temperature were nearly normal, and continued so until noon the next day (the sixth after the operation), when her condition changed for the worse, her temperature rising in the afternoon to 101.4° , while her pulse reached 102. She vomited a quantity of yellowish fluid having an offensive though not a distinctly fecal odor, and became very restless. The tympanites for the first time was marked, though by no means excessive. I was unable to see her until evening, when I at once decided to operate without delay. Her temperature was then 100.8° , the pulse being 110. Before doing so, I yielded to the solicitation of the husband and punctured the distended gut through the abdominal wall in several places, evacuating a quantity of gas and giving the patient considerable relief. An hour later, as soon as I obtained assistance, I opened the abdomen and found, as I had suspected, that a loop of small intestine was adherent to the right edge of the wound; there were no evidences of general peritonitis, although the serous covering of the gut above the point of obstruction was distended and intensely congested, while the portion below was much contracted. The adhesion was easily separated, some flakes of lymph were scraped from the gut, and the cavity was thoroughly irrigated with hot

water. The wound in the vaginal fornix, which presented a healthy appearance (aside from the usual amount of sloughing which occurs after the use of the forceps), was reopened and free drainage was established. The vagina was tamponed with iodoform gauze, the cavity was closed, and the patient was returned to her bed in fair condition. She succumbed to the shock of the operation the next morning.

Of course the first question which you would naturally ask after reviewing the history of this unfortunate case (one which gave me more anxiety than any other before or since) is: "Why was not laparotomy performed earlier, as soon as the diagnosis was reasonably certain?" I have reproached myself many times for my failure to do so, and would certainly not hesitate should I meet with the same complication again. But at the time the objections to laparotomy on the fourth day seemed weighty. The patient had rallied well from a severe operation, and had no bad symptoms except a moderate elevation of temperature, without acceleration of the pulse, and slight tympanites. She was taking abundant nourishment and had no nausea. There was really nothing to indicate complete obstruction except inability to evacuate the contents of the upper bowel; and this, as we know, is not infrequently the result of temporary paralysis of the gut, or of a partial obstruction due to the accumulation of gas in a loop of intestine, causing a kink in the portion below it. Moreover, the complication was an extremely rare one. Even under the circumstances I was ready to operate, although I was not sure of my diagnosis; but the case was too important a one to admit of such a procedure without counsel, which I could not obtain. When Dr. Barker saw the patient with me, her condition had improved so much that it actually seemed as if I had exaggerated the trouble. Few men would advise operative interference in the case of a patient whose pulse and temperature were normal, and who was able to take and retain as much nourishment as was given to her. This deceitful calm continued for thirty-six hours, when there came a sudden change, and then the operation was too late to save her. Doubtless the patient would have had the best chance if laparotomy had been performed on the morning of the fourth day after the operation; but even then the chances are that she would have

succumbed to shock or to sepsis consequent upon reopening. How great this shock is, is shown by the results of the less severe procedure, secondary laparotomy for obstruction following abdominal section. Hirsch (*Archiv für Gynäkologie*, Band xxxii., Heft 2) reports only one recovery in fourteen cases, and American statistics are still worse. It is interesting to review in this connection a paper by Reichel on "Ileus after Vaginal Extirpation of the Uterus" (*Zeitschrift für Geb. u. Gyn.*, Band xv., Heft 1), in which he reports in detail three cases which bear a striking resemblance to mine, viz.:

CASE I.—On the fourth day the patient's pulse rose to 140 without elevation of temperature, and the abdomen gradually became tympanitic but not tender. The movements of the distended coils of intestine could be seen. The patient passed neither gas nor feces, in spite of the fact that purgatives and high enemata were administered. There was nausea but no vomiting. Intestinal adhesions were suspected, and an unsuccessful attempt was made to reach them per vaginam. The next day the patient was better; on the following day (the sixth) she became worse, her abdomen being greatly distended and no flatus passing. The stomach was washed out on the seventh day, giving some relief. On the same evening laparotomy was performed. The lower portion of the ileum was attached to the edge of the vaginal wound, the gut above this point being distended. No general peritonitis. Patient died on the table.

CASE II. (Olshausen).—The patient began to vomit soon after the operation, her pulse and temperature not being elevated. Neither flatus nor feces passed. A high enema on the fifth day brought away a few scybala. The abdomen was tympanitic but not tender. On the eighth day there was fecal vomiting. The stomach was washed out, a quantity of greenish fluid with a fecal odor being removed. Laparotomy was performed on the morning of the ninth day. A coil of ileum was adherent to the edge of the wound, the portion of gut just above it being distended and bent at an angle, while below the point of obstruction it was contracted (as was also noted in Case I.). The patient grew rapidly worse after the operation, and died in twenty hours of diffuse peritonitis, as revealed at the autopsy. Two other coils of intestine were found to be adherent to the edge of the wound besides the one which had been detached at the time of the operation. The wound was evidently septic.

CASE III.—The patient was in excellent condition during the first two days, being without pain and passing gas per

anum. On the third day she began to have colicky pains and tympanites gradually developed. On the fourth day she vomited a large quantity of greenish fluid, having had no movement of the bowels. On washing out the stomach, liquid fecal matter was removed. The patient had no pain, and, though her pulse was accelerated, her temperature did not rise above 100.4° . On the seventh day, after receiving a large dose of calomel, she had several loose movements. Vomiting persisted; she collapsed and died on the eighth day. At the autopsy coils of small intestine were found adherent to the edge of the wound, the gut above the seat of obstruction being greatly distended. The large intestine contained fecal matter, showing that the obstruction had probably not been complete. There was no general peritonitis.

The following cases have also been reported :

CASE IV.—Bokelmann's patient (*Archiv für Gynäkologie*, Band xxv., Heft 1) began to vomit on the fourth day after the operation, and had considerable tympanites with a nearly normal temperature. There was no record of fecal vomiting. She died on the seventh day. At the autopsy an adhesion between the lowest portion of the ileum and the edge of the wound was found, the loop of intestine above this point being distended and bent at an angle.

CASE V.—Leopold (*Archiv für Gynäkologie*, Band xxx., Heft 3) reported the case of a patient who was seized with a violent fit of coughing immediately after the operation, in consequence of which a coil of intestine was forced through the wound into the vagina, and was replaced with great difficulty. She vomited persistently and had no movement, but neither tympanites nor septic symptoms were present. Death ensued on the fourth day after the operation. At the post-mortem two coils of ileum were found attached to the edge of the wound, with the usual distention and bend above the point of adhesion.

CASE VI.—Landau reported a second case (*Berliner klin. Wochenschrift*, 1888, No. 10), in which the patient arose from her bed and ran around the room on the fourth day after the operation. Soon after she developed symptoms of localized peritonitis and intestinal obstruction. Laparotomy was performed on the seventh day, and an adhesion between a coil of gut and the edge of the wound was broken up. Death ensued the next day. It should be stated that in each instance the broad ligaments were secured with ligatures, and the peritoneum was sutured to the edge of the posterior fornix after opening it.

In reviewing these seven cases (including my own), one is struck with the fact that the pathological conditions and the clinical symptoms were almost identical. In each one there was an adhesion of one or more coils of small intestine to the edge of the vaginal wound, with distention and bending of the gut above the point of adhesion, thus obstructing the lumen. Although there was intense congestion of the serous covering of the intestines, in no instance was general peritonitis found at the operation. In all but one case death seemed to be due primarily to exhaustion or, where laparatomy was performed, to the shock of the operation. The symptoms continued to be indefinite until after the fourth day, and the classical symptoms of intestinal obstruction (especially fecal vomiting) appeared when it was too late to profit by them. Certain points are to be noted in this connection, as emphasized by Reichel, as bearing on the differential diagnosis. Ileus is most likely to be mistaken for general peritonitis, especially if there should be general tenderness. But, as I noted in commenting on my case, pain is conspicuous by its absence. There is little if any elevation of temperature, the pulse may not be accelerated for several days, and tympanites is not excessive. As in the case reported, it may be unsymmetrical, being more marked on one side; this I regard as an important sign, in fact almost confirmatory when taken in connection with the visible movements of the distended gut. The absence of flatus and fecal movements after the repeated administration of cathartics and high enemata should at once awaken suspicion, especially if four or five days have passed without an evacuation, even though the patient may be entirely free from nausea. It is important to note that the passage of scybalous masses which were contained in the large intestine may mislead the surgeon as well as the nurse, and lull the former into a sense of security. Nothing but the thorough clearing out of the small intestine and the free escape of gas, with lessening of the tympanites, can justify him in feeling certain that his suspicions of obstruction were unfounded. Fecal vomiting is of course conclusive evidence, but the histories of these cases, as of those in which the obstruction has followed laparatomy, show that it usually occurs at a stage in the case when the time for successful operative interference has passed.

With regard to the treatment of these cases I have no doubt in my own mind. I fully agree with Reichel and Hirsch that the surgeon should either operate *early* (not later than the fourth day) or *not at all*. I shall certainly adopt this course in future, even at the risk of opening the abdomen when there is no mechanical obstruction, assuming, of course, that the ordinary means of overcoming the ileus have been tried in vain. Some judgment must be exercised. I refused this week to reopen the abdomen on the third day after laparotomy in the case of a patient who, aside from a probable intestinal adhesion, had persistent shock. Her death was inevitable and would only have been hastened by the operation. But if there is any chance at all, why not take it?

A word as to prophylaxis, and I shall close this paper, which has already exceeded the prescribed limit. It is surprising to me that intestinal obstruction is comparatively rare after vaginal hysterectomy, since the conditions are so favorable. The coils of small intestine fill the funnel-shaped cavity left after removal of the uterus, and lie directly in contact with the wound. Why do they not more frequently adhere to it, even when the operation is perfectly aseptic? I believe with Reichel that slight adhesions do often occur, and that, although not sufficient to cause obstruction, they account for the colicky pains of which patients sometimes complain after recovery. The writer quoted cites two cases in which he was able to see through the speculum coils of intestine attached to the edges of the wound, although in neither instance was there obstruction. After a careful observation of fifteen cases (four of which were my own) in which from four to fourteen pairs of compression forceps were left in situ for from twenty-four to forty hours after the operation, the vagina being simply tamponed with gauze, I have come to the conclusion that intestinal adhesions are more likely to form when this method is adopted than when ligatures alone are used. Not only is a more extensive sloughing surface produced when tissues are grasped *en masse* by large forceps, but the weight of the instruments causes a marked elongation of the funnel-shaped cavity, into which the intestines naturally fall. Indeed, in one case I saw the operator grasp a loop of gut with a pair of forceps and do serious injury to it. This objection might be overcome by

using only one pair of forceps on each broad ligament, or by securing the uterine arteries with forceps and the ovarian with ligatures. The fact that in the forceps operation no attempt is made to suture the divided peritoneum to the edge of the vagina, also favors intestinal adhesion. On the other hand, it is the usual custom with German operators, who have most frequently met with this complication, to sew the peritoneum to the vaginal mucous membrane, at least posteriorly. Reichel suggests a bolder procedure, *i.e.*, to close the peritoneal cavity entirely, on the ground that if the operation has been aseptic it is unnecessary to drain *per vaginam*. He advises suturing the peritoneum to the edge of the vagina anteriorly and posteriorly, then stitching the stumps in the angles of the wound, and finally closing the latter hermetically. I adopted a modification of this plan in a recent case, and was obliged, on account of septic symptoms, to introduce my fingers through the middle of the wound on the third day in order to evacuate pus. Evidently the best plan of preventing intestinal adhesions and at the same time securing free drainage has not yet been devised. That this complication is one of the most serious with which we have to deal must appear from the facts which have been stated.

THE CURE OF CYSTOCELE BY INGUINAL SUSPENSION OF THE BLADDER; COLPO-CYSTORRHAPHY.

BY

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THE cure of cystocele by plastic operations upon the vagina is so often imperfect that a more efficient method would seem desirable. Acting in accordance with the fact that the pelvic viscera have two kinds of support—(1) the *sustaining*, composed of their surrounding connective tissue and peritoneal folds, and (2) the *retaining*, comprising the pelvic walls and

floor—I have adopted a procedure that enables me to strengthen both of these varieties.

In the *North American Practitioner* (Truax & Co., Chicago) of June, 1889, was reported a case of protrusion of the bladder and virgin uterus for which I cut down into the inguinal canals (February 13th, 1889), thence through the posterior walls of the latter into the paravesical (post-pubic) cellular tissue, and stitched this tissue and the fibrous coat of the vagina at either side of the urethra to the incision in the walls of the canals. On the same occasion I performed Alexander's operation and tamponed the vagina. Three weeks afterward (March 6th) I did Martin's posterior elytrorrhaphy and perineorrhaphy. The patient went home in a month (April 3d) apparently well and sound. However, in about three months the anterior vaginal wall began to protrude, and now protrudes to a slight extent, although the uterus is still held in almost a normal position in the pelvis. The inguinal suspension was a failure, partly because I had not sufficiently secured the vaginal walls, and partly because of malignant pelvic disease.

I operated similarly June 1st, 1889, for cystocele, but included the entire thickness of the vaginal walls in the suture. At the same sitting I performed Martin's posterior double elytrorrhaphy and perineorrhaphy. As the patient remains cured, the case seems worth recording :

Mrs. G., age 57, widow, came to me in April, 1888, suffering with an adeno-carcinoma of the corpus uteri and a large cystocele. The uterus was removed March 4th, and the vagina tamponed in position. When she began to walk, the bladder again protruded, and the accompanying symptoms soon became intolerable, worse than before operation. Accordingly, June 1st, 1888, in the presence of Drs. H. P. Merriam, W. W. Jaggard, Agnes Eichelberger, Jessie B. Brown, and Isabel Taylor, I cut down into the left inguinal canal and from there into the post-pubic cellular tissue. After separating this tissue from the pubes and locating the ureter bimanually, I passed a needle armed with silkworm gut from above down through the anterior vaginal wall at the left sulcus. From below I again passed the needle upward through the vaginal wall about one-quarter of an inch from the first puncture, and pulled the silkworm gut up, so that I held both ends at the inguinal opening, with a portion of the anterior

vaginal wall included in the loop. Another suture was made to grasp deeply into the cellular tissue. Both threads were now drawn tight and tied to the inguinal canal in such a way as to close the incision of its posterior wall. The left anterior vaginal wall was thus drawn almost half-way up the posterior surface of the body of the pubic bone. As the patient was not in a good physical condition, I did not operate upon the other side, but contented myself with Martin's operations upon the posterior vaginal wall and perineum. Plain vaginal douches were given for two days each time she urinated or was catheterized, and one per cent carbolated douches after that. The wounds healed by first intention. The silkworm gut soon cut its way through the vaginal wall and has not since been heard from. At the present time the vulvo-vaginal entrance is small, and the urethra and anterior vaginal wall are held well up behind the pubic arch. The symptoms are relieved, and the patient, for the first time in many months, is able to walk the streets comfortably.

Just as Alexander's operation is useful in connection with the necessary plastic operations upon the pelvic floor and perineum, in cases of procidentia uteri, so is inguinal suspension of the bladder (colpo-cystorrhaphy) indicated in bad cases of cystocele to supplement the same operations. Its performance as an addition to Alexander's operation involves but little extra time or traumatism.

The cases reported teach that the suspension sutures should always include some vaginal mucous membrane, in order that they may cut through the tissues as slowly as possible, and thus give the cellular tissue time to adhere firmly to its new position behind the pubes and under the inguinal canal, and to cicatrize firmly under and about the receding loop of silkworm gut.

When both sides are operated upon, care must be taken not to place the suspension sutures too near the urethra, for fear the passage of the urine might be impeded.

A REMARKABLE CASE OF DEXTRO-TORSION OF THE
PREGNANT UTERUS SIMULATING EXTRA-
UTERINE PREGNANCY.¹

BY

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THE history of extra-uterine pregnancy abounds in errors of diagnosis. Not only are many cases not recognized during the lifetime of the patient, the discovery on the post-mortem table probably only verifying its existence, but a variety of affections presenting symptoms resembling this accident are mistaken for it, and *vice versa*. The most lamentable and apparently inexcusable error, however, is the mistaken diagnosis of an intra-uterine for an extra-uterine pregnancy; and yet such mistakes have been made by experienced obstetricians.

Playfair² quotes Joulin, who mentions a case "in which Huguier and six or seven of the most skilled obstetricians of Paris agreed on the existence of extra-uterine pregnancy and had in consultation sanctioned an operation, when the case terminated by abortion and proved to be a natural pregnancy."

Charpentier³ narrates, among a variety of other errors besides the one just mentioned, another instance of intra-uterine pregnancy mistaken for extra-uterine by Schlesinger. There is no doubt that such errors have been made more frequently, but fortunately in most instances the onset of natural labor put an end to the doubt, or the introduction of a sound for the purpose of diagnosis cleared it up by the induction of abortion.

Three things are necessary in every instance to constitute a case of extra-uterine pregnancy: 1st, the presence of a tumor; 2d, the evidence of pregnancy; and 3d, the certainty of an empty uterus. But if we consider how difficult it often is to exactly determine the seat and nature of a pelvic or abdominal tumor.

¹ Read before the Obstetrical Society of Cincinnati, June 6th, 1889.

² "System of Midwifery," 2d edition, page 170.

³ "Traité pratique des accouchements," tome i. p. 1044.

and add to this the obscurity that often surrounds the question of pregnancy, we can easily understand that the combination of the two may present obstacles well-nigh insurmountable for the rendering of a correct diagnosis.

Parry, in his now classic work on "Extra-uterine Pregnancy," says: "All experienced obstetricians are fully aware of the fact that the diagnosis of pregnancy is often attended with difficulties. It is generally acknowledged to be unwise to assert positively that a woman has conceived, unless the fetal heart can be heard or the child detected by ballottement. It is not to be expected, therefore, that the detection of this condition when the ovum is developed outside of the cavity of the uterus is attended with fewer difficulties."¹

This opinion is shared by almost all authorities and experienced observers, although it cannot be denied that much will depend on the acumen and experience of the diagnostician in the correct interpretation of the symptoms and the time of observation. Fortunately the advances made in abdominal surgery have not only had a good effect upon the prognosis, but they have also led the way to a better appreciation of the pathological conditions and hence to the diagnosis of extra-uterine pregnancy. Nevertheless, the general statement is as true to-day as when the above was written.

Following Parry, most authorities have divided the period of extra-uterine pregnancy for diagnostic purposes into three sections: 1st, before the fetal heart becomes audible, *i.e.*, between the fourth and fifth months; 2d, from this time until the death of the child, at or near term, *i.e.*, the period of *false* labor; 3d, after the death of the child, *i.e.*, *missed* labor.

Others, especially the abdominal surgeons, adopting the opinion that all cases of ectopic gestation are primarily tubal, with a more practical view to treatment, designate the first period as that before rupture occurs—*i.e.*, about the fourth month—whilst the other two correspond with the above classification. As the period when the heart first becomes audible is but little later than the limit of development of the fetus in the tube, the periods as cited are nearly identical. It is also generally conceded that the facilities for establishing a diagnosis are least in the first period, better in the third, and best in the middle

¹ Parry on Extra-uterine Pregnancy, p. 174.

period, corresponding to the development of the signs of pregnancy. Hence most errors are to be made in the first, next in the third period, whilst in the middle period, when pregnancy is well established, it is proven not to be intra-uterine, and a well-defined tumor containing the fetus is found, a mistake is ordinarily incomprehensible. Nevertheless, as I have already stated, certain anomalies may occur which even then may throw some doubt around the true condition of affairs, and it is my intention to consider these more particularly.

An error may be made in two ways: Either an extra-uterine is mistaken for an intra-uterine pregnancy, or an intra-uterine is falsely taken to be extra-uterine. The former is not apt to occur, because at this advanced stage of pregnancy certain subjective symptoms, as irregular hemorrhage with discharge of decidua, pain, and particularly the history of rupture, warn patient as well as physician of the abnormal character of the pregnancy. The presence of a tumor in an unusual situation, in association with the above symptoms, establishes a correct diagnosis still more easily.

On the other hand, the memorable cases of Hugnier and Schlesinger prove that, owing to the presence of certain complications in an otherwise normal pregnancy, the opposite error is more apt to be made. To this category I desire to add another unfortunate case; but, as it so closely resembles one recently reported by Küstner¹—who, however, fortunately recognized the anomaly—I take the liberty of first translating his case literally:

“ . . . The body of the uterus may be mistaken for an extra-uterine gestation sac in the early months of pregnancy. Some years ago I was consulted by a colleague to examine his wife, who was said to be in extra-uterine pregnancy. I found the right half of the pelvis filled by a tumor nearly the size of a child's head, the cervix resting upon the left wall of the pelvis; a careful bimanual palpation revealed the uterus in an abnormally high degree of dextro-torsion in the third month of pregnancy; the infra- and supravaginal portion of the cervix pressed firmly against the left wall of the pelvis, and was elongated to such an extent that the error of mistaking it for the unenlarged uterus was pardonable. My diagnosis was not

¹ “Handbuch der Geburtshülfe,” edited by Müller, Bd. ii. S. 541, 1889.

believed, and a later attempt to prove an empty uterus by the introduction of a sound led to an abortion."

This lucky termination, which has been the rule in doubtful cases in which the sound was used to verify the diagnosis, did not take place in the case which I will now relate :

On April 17th, 1889, I was requested to see a woman, in consultation with Dr. Adolph Grimm, who gave me the following history :

Mrs. Eliza K., German, age 45 years, married, had borne nine children, five of whom were living. She was pregnant the last time about four years ago. She had menstruated regularly until December 12th, 1888. About the middle of February she was seized with vomiting, for which Dr. G. was called in for the first time on February 17th, on account of the persistence of the symptom. He prescribed tincture of nuxvomica, the bromides, hydrocyanic acid, milk and lime water, etc., all of which proved of no avail. Hypodermatic injections of morphia in one-quarter-grain doses were then resorted to with good effect, but as soon as they were withheld the vomiting began again. Associated with this was considerable pain, colicky in nature, in the lower part of the abdomen, together with obstinate constipation which neither glycerin nor warm-water injections relieved. The vomiting continued and finally became stercoraceous. Occlusion of the bowel was diagnosticated, and, as the case became very serious, Dr. Frederic Kebler was called in consultation, who agreed with the diagnosis made. The patient was kept thoroughly under the influence of morphia, until suddenly, almost fourteen days after the beginning of her trouble, she was relieved by a spontaneous, large evacuation of the bowel. This caused an immediate amelioration of all the symptoms, except some tenderness remaining in the lower abdomen. Eight days later she had a return of the vomiting, which at this time, however, yielded readily to morphia. She was now able to attend to light household duties. As the pain in the hypogastrium, however, persisted, Dr. G. made a vaginal examination on March 25th. He found the uterus somewhat enlarged, anteverted, and the cervix lacerated. The whole organ was apparently in a state of subinvolution. As it appeared to be empty, a sound was introduced, which passed up a distance of about three inches. Tonics were administered and rest enjoined. One week later, April 2d, he made another examination with the same result.

On April 16th he was again hurriedly called to see the patient, and found her on the sofa writhing in pain. He was about to give her again a hypodermatic injection of morphine near the seat of pain when he noticed a hard tumor to the

right of and a little below the umbilicus. Suspecting an extra-uterine pregnancy, he then called me in consultation, as already stated, the next day, April 17th.

I found the patient rather emaciated, with an expression of agony on her countenance. She declared herself never entirely free from pain, but at certain intervals it would become paroxysmal and more violent. A closer interrogation as to her menstrual function elicited the fact, as already stated by Dr. Grimm, that she had menstruated regularly for the last time on December 12th, 1888, but since then she had occasionally had slight hemorrhages with the discharge of shreds of membrane—"Fetzen," as she expressed it. Dr. Grimm also informed me that some blood followed the introduction of the sound. No membranes had, however, been preserved and could therefore not be examined.

On external palpation an apparently solid tumor could be felt to the right of and a little below the umbilicus. It was movable, but these movements caused severe pain; it was somewhat elongated transversely, measuring about four and one-half to five inches in length. No contractions could be felt. The finger introduced into the vagina detected the cervix high up in the pelvis, pointing towards the sacrum, but somewhat towards the left; besides being lacerated, it was somewhat enlarged and softened, but the softening was not so marked as is generally found in the normal pregnant uterus, for the tissues below the superficial softening had a hard, somewhat fibrous feel about them. The whole organ appeared to be enlarged and had the feeling of a subinvolted uterus.

On making bimanual palpation the body was found to be deflected to the left side, though anteverted, whilst the main swelling was on the right side. In short, the uterus appeared to be independent of the tumor, and pressure upon the latter through the abdominal walls did not affect the mobility of the cervix: in fact, the latter was apparently fixed and immovable.

The sound was not introduced into the uterus at this time, because it was not deemed advisable until a further examination had been made without it; and, moreover, Dr. Grimm's statement that he had twice introduced the sound into an apparently empty uterus, which was followed by a slight discharge of blood each time, was deemed satisfactory.

The next question to determine was, Was the woman pregnant? She believed herself to be so, but said she felt entirely different from any previous pregnancy, and declared "something must be wrong." The size and shape of the tumor resembled about the outlines of a fetus, but the fetal heart could not be heard with certainty, although I fancied I heard it faintly. I expressed an opinion that this was probably a

case of extra-uterine pregnancy, but that it was either ovarian or abdominal.

Dr. Kebler was again called in consultation and informed of the diagnosis; he was not yet convinced of the existence of pregnancy, but agreed, if there was any pregnancy in the case, it must be extra-uterine.

On April 21st I made another careful examination and detected the fetal heart beyond a doubt; it was also satisfactorily demonstrated to my colleagues, Drs. Kebler and Grimm.

The diagnosis seemed now to be clear, but yet I hesitated somewhat, not knowing whether the uterus was really empty. As Dr. Grimm had passed the sound twice previously, and only some blood had followed (and probably also portions of membrane, although this was not positive), I finally also introduced the sound carefully, although with some difficulty. It passed up to the depth of about four and one-half inches, the handle of the instrument being deflected well back towards the perineum and somewhat to the right. "To render assurance doubly sure," as I expressed it, I passed the instrument in a second time, endeavoring to give it a slight rotary movement in order to explore the cavity of the uterus thoroughly.

The result was the same as before. Nothing but a slight discharge of blood followed the use of the instrument, and we were certain that the uterus was empty; and we were just as certain that the woman was pregnant, hence it could only be extra-uterine fetation.

This was confirmed still more by the pains being increased by the movements of the child, which the mother now began to feel distinctly. As these increased, the pains also became more intense, requiring increased doses of morphia, until nearly grain doses had to be given hypodermatically. The effect was but transitory, the pains continuing night and day, and chloroform inhalations were substituted occasionally.

As everything, however, failed ultimately, and the patient was growing weaker and weaker from pain and exhaustion, the question arose, What was to be done next? An operation at this time seemed to be contra-indicated in the interest of both the mother and child. The notoriously bad statistics for primary operation for the mother, and the non-viability of the child at this period, induced me to postpone an operation. As the movements of the child seemed to be the chief cause of pain, its death and gradual shrinkage until a secondary operation could be made was deemed the only hope for the mother. Hence it was determined, if possible, to hasten its death. The different methods were all given due thought and consideration. The injection of morphia was rejected, because Dr. Grimm declared that he, in making his numerous injections, had inserted the needle deeply into the seat of the tumor, and

probably, therefore, also into the gestation sac, without affecting the fetus.

Electricity was next thought of, and, although expecting little result at this advanced stage of pregnancy, it was determined at least to give it a trial. It was first employed on April 24th, and continued every day or two until May 8th. At first the faradic current was used, but as it caused great pain the galvanic was substituted, with a large abdominal electrode. As the pains were aggravated thereby, chloroform was used occasionally. The child's muscular vigor, however, only seemed to be increased, so that Dr. Grimm facetiously remarked "that he was training a gymnast." Hence this treatment had to be discontinued.

It was determined, therefore, to try aspiration of the liquor amnii next, which was done on May 8th. A fine aspirator needle was introduced under careful antisepsis, and about two ounces of the fluid drawn off. The child, however, still continued to live, and the pains continued unabated.

At this juncture the case as well as the family was becoming desperate, and an operation was urgently called for, under the threat that the case would be taken out of our hands unless some relief was given.

After duly considering and representing to the family the dangers of an operation, it was determined to make an exploratory laparotomy and remove the fetus if possible.

Accordingly, on May 15th, in the presence of Drs. E. W. Walker, Gustav Zinke, B. F. Clark, and F. G. Schmidt, and with the assistance of Drs. Grimm, Kebler, and Geo. E. Jones, I proceeded to open the abdominal cavity. All the necessary antiseptic precautions were taken at the home of the family—a tenement house and hence rather unfavorable locality; but she refused to be removed to our hospital, as was previously urged.

An incision was made in the median line about five inches in length until the peritoneal cavity was entered. The first thing that appeared was a tortuous tube, which I at first took for a portion of adherent intestine. Circumscribing it with my fingers, I found, however, that it was the Fallopian tube of the left side. I then traced it to a large, round body, which I lifted up and brought to view; it had a dark purple hue. Passing my hand over and around this body, I found the other, right tube low down in the right iliac fossa. Between the two I felt the large, round body, which proved to be the *enlarged and evidently pregnant uterus, which I had now lifted up into the median line*. General surprise and consternation seized us all. As it was thought certain that there must be a second cavity, into which the sound had passed each time previously, one of the gentlemen introduced it into the uterus

without difficulty to the depth of about seven inches. It had evidently passed up to the fundus. It was clear, then, that this was an intra-uterine pregnancy with torsion and right lateral obliquity of the uterus, which had been lifted up into the median line. No firm adhesions binding down the organ were found; if there had been any, they must have prevented the correction of the displacement. Nothing remained to be done except to close up the abdominal wound, catgut and silk being used for the purpose.

The patient was put to bed in good condition, and rallied from the operation, which consumed less than one-half hour. Towards evening, however, labor pains set in, and she gave birth to a living fetus, of about six months' gestation, about 9 P.M. The child died the following morning. On Thursday, the day after the operation, the temperature was 100°, pulse 120.

On the next day, May 17th, stercoraceous vomiting again set in, the first time since the beginning of her trouble, for her stools had been natural in the meantime. She then began to sink rapidly, and died on Saturday, May 18th, at 9 A.M.

A post-mortem examination was made by Dr. Kebler the same day at 4 P.M., seven hours after death. His notes are as follows:

"Body well nourished; abdomen distended; twelve stitches in the abdominal wall. Removing stitches, no suppuration visible. Wound five inches long; on separating the edges, some adhesive inflammation. On opening the abdominal cavity, a fresh purulent peritonitis is found. Intestines agglutinated by fresh adhesions, and markedly distended. Springing from the cecum, and going over to the small intestine, binding it firmly down, is an old inflammatory band about the size of a quill. Immediate cause of death, purulent peritonitis with occlusion of the bowel."

The case shows the fallacy of the presumptive signs of extra-uterine pregnancy. The history of the early symptoms was such as to arouse a suspicion, at least, of this trouble. The progress only confirmed the suspicion, and the physical examination seemed to settle it beyond a doubt.

First of all, the pain came on at a time when a trouble of this kind might be expected to show its symptoms. It is true that there was no evidence of rupture, but this might have been masked by the pains attributed to occlusion of the bowel, or else it might have been one of those rare cases in which the rupture shows no symptoms. Then, again, it might have been an ovarian or abdominal pregnancy from the start, notwith-

standing the fact that Tait and his followers deny such a possibility. At any rate, the most prominent symptom—pain—which does not belong to normal pregnancy, was constantly present, and (a very significant fact) was increased by the motions of the child later on.

Hemorrhage with discharge of the decidua is said to be the other prominent symptom. In an intra-uterine pregnancy it might usher in an abortion; but in this case no abortion took place, in spite of the introduction of the sound four times at two different intervals and by different persons. If the pregnancy was intra-uterine and hemorrhage followed the introduction of the instrument, every one would certainly expect an abortion to follow; but it did not occur. Then, again, the patient made the voluntary statement to Dr. Grimm that portions of membrane had passed away from her previously. What was more natural to expect than that the decidua which is found in extra- as well as intra-uterine pregnancy was discharged at these times? This, with the evidence of an empty uterus (no abortion having occurred), is almost pathognomonic. The further development of pregnancy was an evidence that abortion had not occurred. Membranous dysmenorrhea had to be excluded on account of the unmistakable symptoms of pregnancy. The diagnosis of occlusion of the bowel, which was correctly made in the first instance, did not militate against the later diagnosis of extra-uterine pregnancy, as it might have been a complication of, or rather directly caused by, the extra-uterine sac. It only tended to confirm the later diagnosis. It must also be remembered that, in spite of the spontaneous opening-up of the bowel, the pain persisted, notwithstanding that the bowels now moved freely. Furthermore, these pains were paroxysmal, as they are apt to be in extra-uterine pregnancy.

Hence these two earliest symptoms, hemorrhage and pain, were conspicuously present. Dr. Grimm then naturally looked for the cause of the trouble in the generative apparatus, and passed the sound into the uterus, although at that time not yet suspecting an extra-uterine pregnancy. This was followed by a considerable discharge of blood. The accidental discovery of a tumor on the right side, the recollection of the fact that the woman had last menstruated regu-

larly three months previously, and that an abortion did not occur after the accidental introduction of the sound, caused the probability of an extra-uterine pregnancy to flash across his mind. All that was now needed was the unmistakable evidence of pregnancy, which was soon furnished by the hearing of the fetal heart. The bimanual examination, which was carefully made in the dorsal as well as lateral position, with and without an anesthetic, not only once but several times, closed apparently the last link wanting in the chain of evidence. Dr. Grimm's opportunities for observation were perfect, because his office was just in the rear of the residence of the patient, so that he saw her frequently by day and night; and yet in the whole duration of his attendance he found no reason to change his opinion.

To repeat, we had, then, the following symptoms: Amenorrhea, followed by irregular *hemorrhage* with the probable discharge of the decidua; *pain*; the presence of a *tumor* on one side, which, although movable, constantly returned to the original situation; the peculiar softening of the cervix, which was harder than normal; the apparently *unimpregnated* uterus, as demonstrated by the sound and by the examination per vaginam; and, finally, to establish the evidence of pregnancy, the sounds of the *fetal heart*. Truly, a combination of symptoms sufficient to puzzle the keenest and most experienced observer.

How accurately these symptoms point to the presence of an extra-uterine fetation will be seen by quoting Parry's summing-up of the symptoms after the fetal heart can be heard; he says:¹ "The question of pregnancy has been settled by hearing the fetal heart or by the discovery of the child by ballottement, and thus one source of the difficulty has been removed. The diagnosis is based upon the symptoms which have already been alluded to as characterizing the first half of pregnancy, conjoined with those which are developed as the gestation progresses. The pain may or may not continue, but the sympathetic signs of pregnancy become more marked. The gravid tumor is usually developed upon one side of the uterus, which it deflects either to the right or left, or pushes forward toward and above the pubes, so that the os is reached

¹ Loc. cit., p. 181.

with difficulty or cannot be found at all. Associated with this is retro-uterine fulness. If the head or breech present, it will be likely to be felt through the vagina; but if the child occupy a transverse position in the fetal cyst, the retro-uterine projection will be found to fluctuate more or less perfectly. The cervix uteri, in the meantime, though somewhat enlarged and more soft than natural, is found to be hard, firm, and not developed in proportion to the duration of pregnancy. These signs make an extra-uterine gestation exceedingly probable. If with them is conjoined the history of a previous abortion with discharge of the decidua, the diagnosis is morally certain, and the introduction of the sound to measure the depth of the uterus is justifiable. If the length of this organ does not correspond with the development of the gravid tumor, and if the uterus is found to be empty, the diagnosis is absolute, etc." With the exception of the retro-uterine fulness, which could not be found well marked in the case just reported, owing probably to the position of the cervix, the symptoms correspond almost exactly.

How, then, shall we account for all these symptoms? In the first place, the pain was evidently caused by the occlusion of the bowel, as was shown by the immediate relief upon the occurrence spontaneously of a natural evacuation. But this could not account for the pains which came on afterward, because the bowels now moved freely. The only explanation for the later pains, to my mind, can be found in the lateral obliquity and torsion of the uterus. But even here we would hardly expect such an extreme degree of suffering, for we all know that even in natural pregnancy the uterus is slightly turned to the right. In the present case the lateral obliquity and torsion was an exaggeration of the normal condition. There were no firm peritoneal bands attached to the uterus which by being violently stretched could occasion constant pain; but it is probable that the old inflammatory band which, according to the post-mortem report, sprang from the cecum, crossed over to the small intestine, and bound it firmly down, was constantly put upon the stretch by the weight of the enlarged uterus.

The hemorrhage is also hard to account for, except that following the introduction of the uterine sound, which was

probably due to a slight laceration of the hypertrophied mucous membrane. The passage of pieces of membrane—or “Fetzen,” as the patient expressed it in German—I am at a loss to explain. That abortion did not follow the introduction of the sound is, however, readily seen to be due to the fact that, owing to the obliquity and torsion of the body of the uterus, the instrument never entered the cavity proper, but only the elongated and hypertrophied cervix, which by this test, as well as by bimanual examination, was mistaken for the enlarged but non-pregnant uterus, just as in the case reported by Küstner. No force was used in passing the sound, for fear of penetrating the wall of the uterus; perhaps if a little more force had been used in the proper direction the cavity could have been entered, and then an abortion would have been inevitable—an occurrence which, in the light of the final result, would have been desirable. The correction of the displacement when the abdominal walls were divided, by the palpating hand, permitted the easy introduction of the sound, and hence abortion occurred because the instrument now for the first time passed up to the fundus. It did not, however, enter the bag of waters, for there was no escape of liquor amnii.

It must be admitted that the introduction of the sound was a mistake when it became clear that the uterus contained the fetus; but the futility of the previous attempts made it almost certain to our minds that there must be a second cavity somewhere. As it was done, however, it complicated the case and probably hastened its fatal termination. I am well aware that the sound should not be used, even in extra-uterine pregnancy, except as a *dernier ressort* to establish the diagnosis; but here it had been used previously without causing an abortion, hence such an occurrence was not looked for when it was used a second time; and even if abortion had followed, it would have been rather a happy occurrence than a calamity, for it would have corrected the diagnosis and prevented a mistake in treatment. In fact, if with all these symptoms, especially the persistent pain, the pregnancy had been recognized as intra-uterine, the induction of abortion under these circumstances would have been justifiable.

It is also singular that the aggressive treatment, as the injection of morphia into the gestation sac, the abstraction of a

portion of the liquor amnii, the use of the electric current, and finally the labor-like pains themselves, did not expel the fetus prematurely. Possibly owing to its displaced condition, the uterus acted at a disadvantage, and hence, although the pains were increased, labor could not occur.

A last word as regards the operation. It has already been stated that it was attempted with great hesitation, although the diagnosis of extra-uterine pregnancy was positive, on account of the prospective bad result both to mother and child. Nothing was done, however, beyond opening the abdominal cavity and palpating the uterus. In other words, it was simply an exploratory operation, and from this standpoint it was justifiable.

It is to be regretted that the woman died, in spite of so simple a procedure; and I am at a loss to account for the purulent peritonitis, as antisepsis was strictly observed. It might be asked, Why was the obstructed bowel not looked for when the abdomen was opened? Simply because no occlusion was expected after natural evacuations followed the first symptom of occlusion. Moreover, it would have necessitated a much larger abdominal opening and turning out of the uterus or removal of the fetus—a proceeding which would have been unwarrantable.

The whole history of the case simply proves that our "hindsight is always better than our foresight," and that we learn more by our mistakes than by our successes. Unfortunate as the result proved in this instance, I cannot forbear quoting the remark of one of the gentlemen associated with me in the case, an otherwise excellent diagnostician, who said: "If I should be confronted with another case bearing all the conclusive symptoms of extra-uterine pregnancy as did this one, I should again be led to adopt the same course"; and yet the whole history confirms the expression of the late Prof. Thorburn, of Manchester: "Granted an absolutely certain pregnancy, with very strong suspicions of its being extra-uterine, the probabilities are nevertheless very greatly in favor of its turning out to be intra-uterine."¹

¹ Strahan on Extra-uterine Pregnancy.

A RECORD OF ABDOMINAL OPERATIONS.¹

BY

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For my address I have chosen the unusual course of making a running report, with brief comments upon separate cases of interest and upon groups of cases, of all my own work in the department known as abdominal surgery.

In this innovation presidents of the British Gynecological Society and of that in Chicago have preceded me, while others in Philadelphia, Pittsburg, and Chicago are quite in the habit of reporting their abdominal surgery by the year. In my own work a number of the cases have been separately reported to this and other medical societies, and have formed the basis of separate papers; but no attempt has ever been made to cover in one paper all my work from the first case to the last, with a full statement of percentages of success and failure in all the groups and varieties of cases operated on, and no analysis has been made and no lessons drawn.

I did my first operation for the removal of the ovaries on August 17th, 1881, and I am informed that the patient is still alive and in greatly improved health. It was a Battey operation, and done for a very bad case of menstrual epilepsy. I had no other case for four years, when I had a Tait operation, but was able to remove only one ovary and tube. The patient was only partially cured, but has since had change of life and recovered, showing that if both ovaries could have been removed she would have been cured completely. My third, fourth, and fifth cases died, which so depressed me that I nearly gave up in despair.

I then went to Europe to see Keith and Tait, Bantock and Thornton operate, and from them learned many points in the technique of abdominal operations, and have since taken many opportunities to witness the methods of abdominal surgeons in various cities in our country.

¹ Being the Presidential address delivered before the Washington Obstetrical and Gynecological Society, October 4th, 1889.

After resuming work I had a run of twenty-five ovarian operations without a death ; my twenty-sixth case died. There were no more fatal cases until the forty-third, when tetanus destroyed a patient who for twelve days gave every evidence of doing well. The next ten cases recovered. In a series, then, of the last fifty-three ovarian operations, there have been only two deaths, giving a mortality of less than four per cent.

In all the ovarian operations, from the first to the last, numbering exactly fifty-nine, there have been five deaths, three of them being the third, fourth, and fifth, the other two being the twenty-sixth and forty-third in the last fifty-three ovarian operations performed.

There were fifteen other abdominal sections, making seventy-four in all. Eight of these were supravaginal hysterectomies for the removal of uterine fibroids, four of which died and four recovered. Three were exploratory incisions—all recovered ; one was a Cesarean section, one was for the removal of a seventy-four-pound cyst of the kidney, one universal cancer, and one extra-uterine pregnancy, all of them proving fatal.

Of the thirteen fatal cases out of the seventy-four abdominal sections, most of them ought not to have died ; at least most of them did not die from any of the usual causes, such as shock, hemorrhage, peritonitis, or sepsis. Thus the first one to die was an old lady aged 65, who seemed to have made up her mind before the operation that she would never recover. She made her will, bid her friends and relations all good-by, and let go her hold on life. She told me, after she recovered from the anesthetic, that she was much surprised and a little disappointed that she had not died under the operation. If I had known her state of mind I would have put off the operation, as I have found that a strong determination and expectation to get well is a great aid to the surgeon. In her low state she fell an easy prey to erysipelas, which I afterwards learned existed in the General Hospital where she had taken a room. A post-mortem showed no peritonitis, septicemia, or hemorrhage.

The second case showed some evidences of poisoning by corrosive sublimate. This was in February, 1885. The sponge water was impregnated with it, and a solution of it was used

to wash out the abdominal cavity. I was ignorant of its danger then. I have never used it since for any purpose inside of a cavity. I am convinced now that many a case has been spoiled by it. Garrigues has recently stated that he knows of more than twenty deaths caused by its use in irrigating the uterine cavity after labor. Pure hot or distilled water, without any chemical compound in it, is just as good and is free from danger.

A partial post-mortem in the third case revealed a slight peritonitis. She took cold, however, on the night of the seventh day, when everything indicated a perfect recovery, had acute suppression of the urine, and was in a comatose and collapsed state for about ten hours before she died. I could never be quite reconciled to her death. It ought not to have occurred. A lot of ice in a towel was put under the back of her neck, and melted and ran down and chilled her back.

The next case to die was a Cesarean section; and I have always thought if a Porro operation had been done in that case she would have recovered. The patient had been three days in labor. After failing with the forceps, attempts had been made to turn the child, but its head never got further around than the left iliac fossa. Efforts were then made to push it back over the os, so that craniotomy might be the more easily performed. I was informed, when called in, that she was at one time five hours under the influence of ether, and was subjected to three operations, viz., forceps, version, and craniotomy.

The Cesarean section was finally done under the most discouraging and uncleanly circumstances imaginable. The house was a one-story negro cabin, and contained only two rooms. The bed and her room could not have presented a worse environment for an abdominal operation. Notwithstanding all these drawbacks, the patient lived for ten days, and died finally from septic peritonitis caused by an abscess forming in a bruised part of the uterus and discharging into the peritoneal cavity. If the uterus had been amputated below that spot, I believe she would have recovered.

I regret to say that the Cesarean section has not yet been successfully performed in our city, and that we are thus deprived of one of the most potent and convincing arguments

when we endeavor to persuade a parturient woman to submit herself to its performance for the sake of science and her unborn child.

In our haste to do away with craniotomy, we should not allow the pendulum to swing too far the other way. I know of two cases in a neighboring city where all the preparations had been completed for a Cesarean section; many physicians had been invited to witness the operations at an appointed hour; but, the night before, nature asserted herself, and, unaided by the surgeon's knife, these two women gave natural birth to their children.

Not many months ago I was requested by two physicians to perform a Cesarean section upon a woman whom they had failed to deliver with the forceps after several attempts had been made. While I was preparing my instruments and sponges for the proposed operation, a telephone message was received from the nurse stating that the baby had been born alive in the absence of the doctors, and that the mother and child were both doing well. The errors in diagnosis are not all made by the craniotomists.

Cast-iron rules will not do in regard to the Cesarean section when they cannot be adopted in regard to other surgical procedures or methods of treatment. In the new-born zeal in regard to antiseptic injections in *all* cases of labor and the puerperal state, which some were anxious to adopt, much harm has now been proved to have followed their too frequent use in normal as well as abnormal cases; and papers are now being written by our best men upon the abuse and dangers following their "meddlesome" and too indiscriminate employment.

So I think it will be in regard to the illogical and sentimental logic which has been recently used by those who would forbid the performance of craniotomy upon the living child under any and all circumstances. Even Dr. Harris, who has done so much to influence the profession of America and the world in favor of the more frequent and timely resort to Cesarean section, told me last spring that he did not approve the teachings of those writers who would do away entirely with craniotomy.

It would seem to me to be a great blow at our independence as educated and scientific professional men to have our hands

or consciences so bound by rules or laws as to prevent us from doing that which our experience and conscientious judgment indicated to us was for the best interests of the patients entrusted to our care.

The amputation of the pregnant uterus would probably be followed by a greater average good to humanity than the Cesarean section, inasmuch as in cases of pelvic deformity which prevented the birth of a living child future pregnancies would be thereby prevented, and the woman not exposed to repeated operations which involve great danger and risk to both mother and child.

I hardly think that the time is yet ripe for the giving-up of craniotomy, but I think we should do all we can to educate the people as well as the profession in the matter of early diagnosis and the preparation for a timely and properly arranged Cesarean section. Craniotomy will *then* be resorted to only for the neglected cases and those mismanaged by midwives, where surgeons are called in too late and under too unfavorable surroundings to promise success, as in my own case.

The fourth death was my twenty-second abdominal section, which was done for the removal of two large fibroid tumors of the uterus. A supravaginal hysterectomy was performed. I suppose this patient died of septic peritonitis. My thirty-fifth abdominal section was for the same purpose, and the result was the same. Case 42 was also a supravaginal hysterectomy for a very large fibroid which caused constant pain and hemorrhage, making life a great burden, and she died. Case 70 was also a fatal supravaginal hysterectomy, which was done suddenly to relieve intestinal obstruction which had existed for more than a week. The pelvis was apparently filled by this uterine fibroid, and the operation was done to save life. Though much relieved by the removal of the tumor, the obstruction was not overcome, and she died six days later. A post-mortem showed cancerous occlusion of the transverse and descending colon, and a perforation and discharge of feces into the peritoneal cavity. In two cases which I feel I am right in reporting as having recovered from ovariectomy and as having been discharged as cured of ovarian tumors, I have since heard that one has died of cancer and the other from malarial dysentery.

There have been eight supravaginal hysterectomies performed on account of uterine fibroids; of this number four died and four recovered. If this were the average mortality of the operation, it would be sufficient to condemn it; but other operators have succeeded better, and I feel confident that I can do better. A great majority of these tumors fortunately do not require operations, but the gynecologist will occasionally find one which is not prevented from growing and causing symptoms which make death seem preferable to the life these sufferers are compelled to live. Ergot, the curette, iodine, and electricity fail sometimes, and an operation is desired, and we must so improve its technique as to relieve it of its dangers. In the hands of half a dozen operators we all can name, its mortality is now reduced to as low as ten per cent, and with a very few there has yet been scarcely any mortality. Electricity as used by Apostoli, and as recommended by Keith and practised by many others, should be given a fair trial before subjecting a patient to the dangers and mutilations of hysterectomy; but I hesitate to believe that it is within the power of this agent to cause the disappearance of these solid masses of flesh which are removed by the surgeon. Patients are benefited for a time by many different kinds of treatment, principally by ergot, the curette, muriate of ammonia, and electricity; but I have seen all the symptoms complained of disappear just as completely for a while by rest and saline purgatives. In a certain class of cases the symptoms all return again to torment their unhappy victims, the treatment has to be gone through again and again, and still some of these tumors grow, life ceases to possess charms, and hysterectomy must be done to save life.

I feel in regard to this operation, as in regard to craniotomy or the tapping of an ovarian cyst, that circumstances may and are likely to be present which will make their choice the lesser evil and perhaps the greater boon. I saw Dr. Price remove a soft, rapidly growing ten-pound fibroid by supravaginal hysterectomy last week, and he remarked, as it lay in the basin, that he did not believe electricity could have caused its absorption and disappearance, connected as it was with numerous large blood vessels, any more than it could cause the absorption and disappearance of the heart. Pune-

turing these tumors with sharp electrodes has been followed by a greater mortality in the hands of some men than hysterectomy in the hands of others. Dr. Cladwick has reported two deaths from its use in his own practice, and we all know of others—even Apostoli had one; while Massey has in truth been compelled to acknowledge at least one of the cases reported as cured in his work, as an electrical failure. I know of one case, referred to in our Medical Society as a glorious example of the power of electricity in causing the disappearance of symptoms and the partial subsidence of her tumor, who is now as bad as ever. The tumor is growing more rapidly, and the pain and hemorrhages are more severe, than formerly, so that her Washington physician came to me three months ago to know if I would operate if he would bring her to me. The first report was correct. I saw the case, and agreed to the use of ergotin and electricity, and she was wonderfully benefited, so that she went home much improved and very happy. But it did not last. As we say with the use of some medicines, they lose their effect, and so it may be with electricity; and I fear that our expectations in regard to the lasting powers of this very fascinating and subtle agent are doomed to bitter disappointment, and that hysterectomy will be the only hope of life for some.

In this connection I might mention that I have had five vaginal hysterectomies for uterine cancer. Of these five operations three died and two recovered. One of these two has since died from a return of the disease, and the other, I think, has symptoms that are unmistakable, and is doomed to an early death. And yet I cannot avoid the belief, and there is abundant evidence to show, that this operation has a place which cannot be filled by any other mode of treatment. The galvano-cautery and Sims' and Baker's high amputation will be more frequently called into use, but they will sometimes fail, and total extirpation presents the only hope. It is quite possible that my cases were badly selected, and the criticism which applies with force to each case may be that they had progressed too far at the time of the operation.

Where there is absolutely no hope without an operation, one is tempted to offer any chances there are with the operation. The great difficulty rests in the diagnosis. When the operation is the main chance, the patient and her friends do

not realize the danger ; when they are ready and anxious for it, the time is past when all the infected parts can be removed, and the operation is sure to be followed by a return of the disease. Case 38 was one of universal distribution of cancerous growths. A large mass of something was removed as the only way to arrest bleeding, which had been started up by attempts to complete a diagnosis. With the mass in my hand after the operation was over, I was unable to say what I had removed. Fatal hemorrhage came on suddenly after an attack of vomiting. She was doing fairly well until the latter part of the second day, when she suddenly grew weak, pale, and faint, and in half an hour was dead. I have not ventured to classify this case. It was not an ovariectomy, and it was more than an exploratory incision. The twelfth death was a cyst of the kidney. It was supposed by many that this case was an ovarian tumor. I refrained from making any diagnosis. It was evidently a cyst, and the woman was nearly dead, greatly emaciated, with large bed sores on her back; had been in bed many weeks. After opening the abdomen seventy pints of fluid were withdrawn from the sac. It was unusually adherent, and until I found, in the process of enucleation, that the uterus and ovaries were healthy and had no relation to the tumor, I was uncertain of the exact nature of the growth. Its origin was traced to the left kidney. The sac weighed four pounds.

Case 58 died in my private hospital of tetanus fifteen days after the removal of a sarcomatous ovary the size of a child's head. This is the only death which has occurred in the hospital since its establishment, out of about one hundred surgical operations, twenty-one of which were abdominal sections. Case 71 was a very sad case. During the first month after marriage Mrs. S. was taken suddenly with pain in the left iliac region, after a fall while walking about her grounds in the country. She gradually grew worse, until she was compelled to remain in bed under good medical treatment, a part of the time under the care of two physicians. I saw her with them after she had been seven weeks in bed. Her pulse was about 130 and temperature 103°. In the morning she was often without fever. It was agreed by all that she was growing worse. A tumor could be distinctly made out on the left side of the uterus,

which was thought to contain fluid which, from her symptoms, was supposed to be pus. An operation had been proposed as the only means left in order to save her life, which was seriously threatened. I agreed with the physicians as to its propriety, and, after explaining the situation to the family, an hour was agreed upon for its performance. Upon opening the abdomen the tumor was found to be closely adherent to everything it touched, and the evidences were abundant that she had been suffering from a pelvic and general peritonitis for several weeks. In separating the adhesions from the under portion of the tumor, its walls gave way and at least a quart—some thought three pints—of large, black solid blood clots escaped from the inside of the tumor. They welled up out of the wound in great quantities. We were in doubt then, and I am now, as to the exact nature of the tumor. My belief is that it was a ruptured tubal pregnancy, that the rupture occurred at the time when the patient fell, that blood was poured out into the folds of the broad ligament, and that as inflammation went on additional coverings to the tumor occurred, partly aided by adhesions. It was an incomplete operation, as the sac wall was partly made up of adherent intestines and other viscera which could not be removed. Everything which could be was removed. The toilet of the peritoneum was carefully made after much washing-out of the abdominal cavity, a drainage tube was left in, and the wound closed and dressed in the usual way. She never seemed to rally completely, and died before the end of the second day after the operation. The size and density of the clots composing the tumor were proof that they could not have been removed by any tapping operation through the vagina. It is probable that this belongs to that sad and pathetic list of cases which are classified as "too late." The thirteenth of the group of deaths out of the list of seventy-four miscellaneous abdominal sections occurred in a nymphomaniac who was brought to Providence Hospital from a four years' incarceration in a lunatic asylum in Staunton, Va. Battey's operation was done to relieve a terrible, beastly nymphomania which only showed itself for two weeks in each month. She never would be controlled after the operation; was constantly changing her position and trying to get out of bed. She had a large abscess along the line of sutures in the abdominal wall, which ruptured

into the peritoneal cavity on the seventh day, just before the removal of the stitches, and she died within two days.

An interesting group of seven cases of the removal of the uterine appendages on account of rapidly growing and bleeding uterine myomata, is worthy of a moment's attention. In all of these cases other treatment had been resorted to without avail. Several of the patients had been a number of times at the point of death from the loss of blood, and I am happy to state that in each instance there has been a perfect and complete cure.

In four of the twenty-nine cases of removal of the ovaries and tubes, only one ovary and tube were taken away. In each of these women the trouble returned in the remaining ovary. In one the change of life has now occurred, and she is quite comfortable, but for a number of years she was a martyr to her sufferings and was a constant invalid. She and her family have frequently blamed me for not completing her cure at the time of the original operation by removing the other ovary. In another case the same history has repeated itself, and the day is now set for a second operation for the removal of the ovary which I was persuaded not to remove. In the third and fourth cases the other ovary will have to come out before the patient is well. She was quite comfortable for a year, but is now worse than before the first operation. Much has been said and written about "the other ovary" in those cases where one only was sufficiently diseased to demand removal. The history of these four cases would indicate the wisdom of the complete removal of both ovaries and tubes when the abdomen was opened for the ablation of one. Many other operators have had the same experience and are gradually adopting this opinion.

Only one out of the seventy-nine cases in my experience in abdominal surgery was colored. This is somewhat remarkable, as we have in Washington a population of about eighty thousand colored people.

Of the twenty-nine cases—twenty-five really of the removal of both ovaries and tubes—two women have continued to menstruate the same as before the operation. Battey tells me that this occurs in about five per cent of his cases where the operation is done mainly for the purpose of bringing on the change

of life. In a recent conversation he said that in about five per cent of post-mortem examinations a third or supernumerary ovary had been found, which would seem to account for this heretofore unexplained and embarrassing peculiarity.

In the two cases where menstruation continues there has been little benefit following the operation. They were both done for the relief of menstrual epilepsy, and in both cases the convulsions have not been much lessened. It is quite possible that both these women possess a third ovary, whose removal might complete their cure.

CORRESPONDENCE.

TO THE EDITOR OF THE AMERICAN JOURNAL OF OBSTETRICS.

DEAR SIR:—In the December number of the JOURNAL OF OBSTETRICS there appears an article by Dr. T. J. McGillicuddy which includes a description of a new model of axis-traction forceps.

Believing, as I do, that the principle upon which this instrument has been constructed is based upon an incomplete understanding of Tarnier's invention, I wish to request an opportunity of stating in the pages of your JOURNAL the faults which I think are to be found in Dr. McGillicuddy's model; and, furthermore, though I wish to disclaim any intention of casting doubt upon the originality of his work, I do desire to point out a fact of which he is obviously ignorant—that the instrument which he describes, so far from being a new model, is one which was placed before the profession and achieved its failure more than twenty years ago.

It is a well-known fact that the idea of axis traction was not original with Tarnier, and that the credit which properly belongs to him is that of having invented the first successful axis-traction instrument; and it is, I think, generally admitted, by those who have had an extended experience with such for-

ceps, that the main reason for the success of Tarnier's model and those of his imitators is the attachment of the rods to the blades by a freely movable joint, which from its situation permits the head, in its passage through the pelvis, to guide itself automatically in the direction of the least resistance. Indeed, one of the most successful of modern instruments, that of Breus, is constructed upon the principle that the existence of such a joint is the only advantage of Tarnier's instrument, and the extreme popularity of this form of forceps in the great clinics of Vienna is sufficient evidence that axis traction, as such, can be discarded without seriously injuring any instrument which retains the other and perhaps more important of Tarnier's innovations.

My own, for an American, somewhat extended experience in the use of axis-traction forceps in contracted pelves inclines me to believe that it would be safe to predict *a priori* and on theoretical grounds the certain failure of any such rigid instrument as that which Dr. McGillicuddy has described. But such a statement is perhaps superfluous in view of the fact that the test of practical experience, always preferable to that of theory, is not wanting in this case, as may be seen by a reference to the Transactions of the American Gynecological Society for 1881, to which Dr. A. H. Smith contributed an exhaustive paper on the history of axis-traction instruments, in which he figures three models, two invented by Hubert in 1869 and one by Morales in 1871, which forceps Dr. McGillicuddy will, I think, agree with me are entirely identical—the two latter in principle, the first in both principle and construction—with that which he has himself invented. In addition to these two forms, I am able to testify from personal knowledge that a closely similar instrument was invented and described in 1885 by an obstetrician of this city.

All three of these models were warmly praised by their inventors, but no one of them was received with any general approbation. That a similar fate must meet this new attempt to revive an obsolete instrument can, I think, be confidently predicted.

The high estimate which my experience has led me to place upon the value of properly constructed axis-traction instruments, and my belief that the use of such an instrument as

that of Dr. McGillicuddy would necessarily throw discredit upon this whole class of forceps, must be my excuse for the unpleasant task of writing so sweeping a criticism of his invention.

Very truly yours,

EDWD. REYNOLDS, M.D.

15 CHARLES STREET, BOSTON, MASS.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF NEW YORK.

Continued Meeting of October 1st, 1889.

DR. C. A. VON RAMDOHR read a paper on

THE DIFFERENCE IN TREATMENT, IN HOSPITAL AND PRIVATE PRACTICE,
OF DYSTOCIA DUE TO CONTRACTED PELVIS.

The paper notes the frequency and discusses the relatively great importance of the minor degrees of pelvic deformity, contractions so slight as to be overlooked except by most careful and skilled examiners, but nevertheless producing dangerous dystocia and materially increasing both maternal and fetal mortality.

In the hospital, where every convenience is at hand, where strict diagnosis and accurate pelvic measurements are insisted upon, any necessary operation is possible, and is chosen, not with a view of its facility of procedure, but only in the best interests of the case in question.

In private practice, only an estimate of diameters is usually obtained; for want of assistants, certain operations, as delivery through artificial passages, are practically impossible. All operations are more dangerous, partly on account of septic surroundings and bad nursing, partly because of the want of the necessary instruments and practice in their use. The judgment is apt to be clouded by subjective considerations. While in hospital practice the relative indication for Cesarean section is permissible, in private practice craniotomy, even of the living child, retains, and will retain for years to come, its legitimate place, which Jaggard's masterly exposition has so ably fortified. Conservative methods and interference for cause only will be safest in private practice.

DR. J. H. FRUITNIGHT.—One fact impressed itself on my mind rather forcibly during the reading of the paper, namely, the comparative rarity of contraction of the pelvis met with in private practice. It has been my privilege to attend considerably over a thousand obstetrical cases, and among that number there were only two in which there was contracted pelvis. In one, craniotomy had to be performed after failure to deliver with the forceps. The other case I saw recently in consultation. The conjugate diameter at the brim was two and one-fourth inches. The hygienic surroundings were bad, and the patient was sent to the hospital for operation. Dr. Von Ramdohr has shown very clearly the difficulties surrounding these cases in private practice.

THE PRESIDENT remarked that the paper did not take into consideration cases with so marked contraction as in the second one mentioned by Dr. Fruitnight.

DR. WALDO said he had had little experience in hospital work in this line, and he had seen but one case of contraction of the pelvis in private practice. He advised that patient to have an abortion performed early in pregnancy, but she was anxious to bear a living child. It proved at term a difficult high-forceps case for a small child, but she was delivered in safety. With regard to accuracy of work in hospital practice, he wished to say that when he was an interne in the Maternity Hospital he had seen, in cases in which it was a question of what operation to do, as much as half an hour spent, with the patient under chloroform, in determining whether a sound was due to the fetal heart or the maternal circulation; and it seemed to him that the patient received as much damage as, if not more than, would have been done to have gone on and performed the operation which seemed to be called for, instead of striving for an exact diagnosis.

DR. R. A. MURRAY.—I have been extremely pleased with the paper, and can criticise only one point. Leaving out of the discussion the decidedly contracted pelvis, which is easy of recognition and demands one of the major obstetric operations which would cause the general practitioner to send for help, we have to deal with moderate contractions; and here the fault lies often, not in inability to judge of the size of the pelvis, but of estimating the size of the child's head. There may be failure of delivery by the forceps or by version, and final resort be had to craniotomy, not because of a very small pelvis but an unusually large head. I think that while we do not have in American women contracted pelvis as often as it is seen in foreign women, yet there is a considerable proportion of difficult labors due to the large size of the child's head. The promontory may be touched, and the antero-posterior diameter found to measure four and one-half or four and three-quarter inches. The head not becoming engaged, the forceps may be applied and fail of extraction; version may also fail, and craniotomy at last be resorted to. On examining the child afterward for the cause of the difficulty, it will be found that the head was altogether too large; perhaps the sutures were close and did not permit of the usual amount of moulding. In the case of American women, that has been the usual cause, in my experience at least, of craniotomy. I was rather surprised to hear from one of the gentlemen who spoke that there are so few contracted pelves in the sense of requiring major operations, for I have certainly seen a good many. Last month I had four cases where in the first labor every child was sacrificed because of contraction of the pelvis. Yet I have seen many other cases, with as great a contraction, delivered successfully; but, taking a representative case of the latter kind, it happened to be a child of seven and one-half pounds, while in the former the weight after craniotomy was twelve and one-half pounds or more. Here, if the child's head had been of ordinary size, the woman would have been delivered without injury to either herself or child.

I think, as the author has stated, that we should give much more attention to external measurements. If the child's head has not become engaged and the bones compressed, and it be found on examination that the head is large and the sutures not open, a difficult labor may be anticipated, and the question will arise as to what operative interference shall be instituted. Unless the pelvis is markedly contracted, and there is no hope of extracting the child through the natural channel, the mother and friends will not listen to the question of Cesarean section. Either craniotomy or version will have to be performed, and I do not hesitate in expressing my preference for the latter.

With regard to the influence of hygienic surroundings on the result of craniotomy, I must say that, in my experience in outside—not hospital—practice, the patients have done remarkably well, especially if the operation be done early and without laceration of the maternal parts. I have yet to lose a woman after craniotomy in outside practice. I have seen a number lost in hospital practice because of the house-staff not sending early enough for the consultant to do the operation.

These, then, are points which I would emphasize, namely, the necessity for determining the size of the child's head as well as that of the pelvis, and also for determining by external measurement the position.

As to determining the child's heart, I think a man must be extremely unskilful to require much time for doing that. One can generally decide by the position of the child's head where the heart is, and at once hear the stroke if the child is living.

DR. BUCKMASTER.—I saw a case recently which illustrates how pertinacious some practitioners are in the use of the forceps. It was a case of contraction to slightly over two inches. When I saw the patient in consultation, the vagina was a slough from the efforts which had been made to deliver with the forceps. The child was dead. It was a very hopeless case, and I urged that the only thing to do was to perform craniotomy, yet the doctor begged to have "another chance at that head." I did craniotomy, which I believe is about as simple an operation as there is in surgery, and to be attended by as small a mortality where there is no injury to the maternal parts. But I must say that I object to doing craniotomy on a living child. I can hardly reconcile myself to the thought. If women object to Cesarean section on the ground that they do not wish to undergo so severe an operation, I would allow some one else to take charge of the case.

DR. HANCE.—I can report a case in which the amount of contraction of the pelvis and the amount of force used during extraction were not greater than I have frequently seen in high applications of the forceps in some form of contraction of the pelvis, yet a severe accident occurred which proved fatal for the woman. She was an unmarried, well-built girl of eighteen or twenty, who had contraction of the pelvis, although not to a marked degree, but sufficiently so not to permit the head to engage. The forceps was applied, and I witnessed the following accident: Traction having been made a certain length of time, not longer than ten or fifteen minutes, suddenly something was heard to snap. Afterward the child's head came down, and it was delivered alive. It was rather large, weighing about nine pounds; the head was well formed, the bones tolerably hard. The woman had pretty severe hemorrhage, due to laceration around the clitoris and anterior portion of the vagina, which was controlled only by introducing a firm plug of iodoform gauze and cotton, and making digital compression. She died within from twenty-four to thirty-six hours. It was found on vaginal examination (an autopsy was not allowed) that there had been a separation of the symphysis of from an inch and one-half to two inches, and that the traction and pressure of the bladder had been such as to cause excessive bleeding into the peritoneal cavity. I relate the case because the amount of traction force employed was not very great, yet the result was fatal.

THE PRESIDENT asked Dr. Hance whether it was not possible to diagnose decided contraction of the pelvis in the case.

DR. HANCE replied that it was not decidedly contracted. The slight amount of contraction present had been diagnosed by the physician who applied the forceps. He believed that, although only a small segment of the head had engaged, he could deliver with the forceps. He attempted it, and used no more force than I have myself used in high-forceps cases, but with the result described.

DR. E. H. GRANDIN.—Very little remains to be said, the reader of the paper having covered the ground so thoroughly. I range myself on the side of those who advocate careful, scientific examination of every woman, wherever possible, before labor, and long before labor if possible. I do not think that, as a rule, we are scientific enough in obstetrics. Some time ago, when reading a paper on this subject, I made the statement that obstetrics had not advanced to the same extent that its sister gynecology had done. I would reiterate that statement here to-night. I think the general practitioner frequently lacks science in the management of his obstetric cases. He neglects, in the first place, to examine his patient a month or two or three months before labor, for the purpose of determining pelvic contraction; in order, if it is found to exist, to induce premature labor at the

proper time, and thus spare the woman the danger which necessarily accompanies the birth of the child through a contracted pelvis. The average general practitioner is too apt to use the forceps without first determining whether the child is likely to engage of its own accord. In the large proportion of cases where the fetus will not engage under uterine contractions, the chances are that the before-coming head is not going to be engaged with the forceps without injury to the mother or child. Careful determination of the existence of contraction at the superior strait will teach the scientific obstetrician that version, instead of high-forceps application, will prove safer, for the reasons stated by the author, that the after-coming head engages and moulds better than the before-coming head. The average practitioner is too apt, I think, to put on the forceps and attempt to engage the head, and not only make one attempt, but several in cases where, if he had recognized the presence of contraction, he would never have applied forceps. When I speak of high forceps, I mean the forceps applied to the head above the brim or when just engaged—that is to say, applied to the head in that condition in which version is not contra-indicated. If the head is engaged, then version is contra-indicated.

I think that we would err on the safe side, if at all, by arming ourselves with the instruments of precision which we possess in obstetrics; by carrying with us a pair of calipers with which to measure the external diameters, if our internal examination leads us to suspect that there is a flat pelvis, or an antero-posterior contraction of an inch or more than an inch. I know that in hospital practice we have, by the use of instruments of precision, saved many children that otherwise would have been lost, and have saved the woman from the danger of wounds through which sepsis so often arises.

In regard to the choice of operations in private and hospital practice, so far as version and forceps are concerned I would be guided by the same rules in the one case as in the other. I see no reason why I should swerve in the least in private practice from what I would do in hospital practice. Version, properly performed, is not as dangerous to the mother as high forceps; and version applied by the inexpert I think is less dangerous to the mother than high forceps applied by the expert. I have recently seen two cases, in both of which attempts had been made, in the one by one gentleman, in the other by two, to bring down the before-coming head by the forceps when measurement showed a contraction to three and one-half inches. The fetal head was of the kind Dr. Murray has spoken of. The fontanelles were not very large, and the head was not very pliable. In one of those cases I was asked to come prepared for craniotomy. It was in private practice. I refused absolutely to perform craniotomy on the living child. I told the gentleman that I would attempt version. I refused to try forceps, in the first place because they had already been tried ineffectually, and, in the second place, because very superficial examination enabled me to touch the promontory. If version should fail, Cesarean section would be my second choice, for the child was living, and for the reason that under present means of obtaining asepsis the results of Cesarean section should be as favorable for the mother as craniotomy, while the latter, of course, destroys the child. In that case I was able to deliver by version, which brought the wedge in the right way. In private practice I would take the ground taken by Dr. Buckmaster—favor Cesarean section to any operation which mutilates the child, the child being alive; provided, of course, the child was old enough to live after being brought into the world.

THE PRESIDENT.—I have been very much pleased with the paper, and think it is exceedingly practical. I was particularly interested in the manner suggested by Dr. Von Ramdohr for the general practitioner, or those not accustomed to the use of instruments of precision, to diagnose contracted pelvis. I believe that if these practical points were more thoroughly taught in undergraduate schools we would find the general practitioner twenty years hence more proficient in this direction than at present. I can say, as the author has said, that there seems to be decided ignorance to-day with reference to determining whether a patient has or has not contracted pelvis.

I have at times been greatly surprised at the ignorance shown on this subject by some intelligent general practitioners whom I have found in attendance on patients. In one instance two gentlemen had worked with high forceps to engage a head which could never have been engaged had they labored a hundred years, unless they crushed the head or broke the pelvis. Hours had been spent in such futile efforts, the child had died, and the patient was dying, and did die within fifteen minutes after my arrival. They had not discovered that the pelvis was contracted, measuring about three inches in the superior strait.

I believe that slightly contracted pelves are much more common than is generally supposed. We should teach our friends, and those placed under our instruction, to find out by measurement with the aseptic finger why it is in a given case that the head does not advance into the superior strait before applying forceps. I do not think we have any right to apply the forceps until we have learned the nature of the case. If it is found to be only a slightly contracted pelvis, the child's head not exceedingly large and the sutures not exceedingly close, apply the forceps and deliver. But if it be about three inches, it is safer to turn; if only two and one-half inches, better do Cesarean section, in either private or hospital practice. The great fault to-day is that many physicians do not know *what* the trouble is, when they find trouble.

DR. VON RAMDOHR.—I thank the gentlemen for the part they have taken in the discussion. There are a few points to which I would yet call attention. Dr. Murray spoke of estimating the size of the head. In the paper I made some mention of the necessity and of the manner of doing this by fixing the head, trying to press it from outside into the pelvis, by which means one can judge fairly whether that particular head will go into that particular pelvis, and thus get an idea of the prognosis.

As far as craniotomy is concerned, I think the two gentlemen who oppose it do so for two different reasons. Dr. Buckmaster, if I mistake not, is opposed to craniotomy for moral and ethical reasons. He would not perform the operation himself, but would let the case pass to one who had less heart.

DR. BUCKMASTER.—I oppose it for the two reasons.

DR. VON RAMDOHR.—Dr. Grandin objects to craniotomy, believing that it will totally disappear. I have no doubt that Dr. Grandin is theoretically absolutely correct, but I have no doubt also that practically he is so far absolutely wrong. The latest statistics of modern Cesarean section in Vienna and elsewhere show a mortality for the woman of about eight and one-half or nine per cent. In between fifty and seventy craniotomies in cases of normally contracted pelvis there was not one death of the mother. In certain parts of New York City the mother would surely die if the abdomen were opened. And, leaving out the question of ethics, it is not impossible that in some of those instances the child would be better for craniotomy than to enter the world alive with such surroundings and influences. So far I think that in private practice it is only with absolute indications that Cesarean section is permissible; its time under relative indications has not yet come.

DR. GRANDIN.—The doctor says that the time for the relative indication has not yet come, but he thinks it will. I think it is pretty near, too. I would like to ask him how many of those women on whom Cesarean section was performed, according to the statistics he gives, had been tampered with by attempts with the forceps or version before Cesarean section was resorted to? His answer to that question will probably account for the high maternal mortality. When I speak of Cesarean section I mean when the operation is done advisedly and before other, and fruitless, efforts have been made at delivery. The woman who has been subjected to attempts with the forceps and with version may likely enough die if Cesarean section is then performed; but the woman on whom the section is performed advisedly, because the chances are that she could not be delivered successfully except after craniotomy—that woman, I think, will recover even in Mott street, where we could not have the necessary antisepsis of the lying-in room, but where, however, the operator could carry out personal cleanliness, and cleanliness

of instruments, assistants, and patient. Under such conditions the physician would find his heart made lighter by not having sacrificed a living child, and I think would find the maternal mortality much lower than that of the Vienna statistics.

DR. VON RAMDOHR.—But all the cases in which craniotomy was performed had also been tampered with by attempts with the forceps and version; yet the percentage of mortality was zero, while that from Cesarean section was large. The craniotomy in some instances was not only not done at once, but was done on the after-coming head.

DR. GRANDIN.—It will be granted, however, that the cases in which craniotomy was performed on the after-coming head were not suitable for Cesarean section. Further, statistics of this nature are likely to be misleading.

DR. BUCKMASTER.—Dr. Von Ramdohr misunderstood me. I did not mean that the mere crushing of the child's head and delivery was as dangerous as Cesarean section. On the contrary, I said that craniotomy is a simple operation, and should not be attended by any maternal risk whatever. At the same time I believe that the mortality from Cesarean section, or, under certain conditions, the Porro operation, can be made so low that we would never be justified in destroying a living child.

DR. VON RAMDOHR.—I simply take the position that at present we are not so far advanced that we can put the relative indication for Cesarean section into the hands of the private practitioner. I think Dr. Grandin will agree with me so far.

DR. GRANDIN.—It depends on the general practitioner. There are some whom I would not consider competent to do craniotomy, simply for the reason that they are not able to judge of the size of the pelvis. Such a general practitioner I would not trust to do either craniotomy or Cesarean section. Cesarean section, performed according to modern indications, is the simplest of all obstetric operations. The operator need scarcely know his anatomy; he only needs to know how to suture the uterus. He can learn that from the books in a minute before proceeding to operate. While I agree in the statement that we have not yet reached the point where the relative indication should be taught, yet in a given case I would favor Cesarean section over craniotomy where the child was living.

DR. MURRAY.—As I understood the discussion, it was about moderate pelvic contraction. I think all are agreed that in moderate contraction, and where the size of the head can only be approximately determined, we should try version even on the living child, bring the after-coming head down to the superior strait, and make the proper attempt to deliver. Then, if extraction is not possible, it will be necessary to perforate. One could not do Cesarean section on the after-coming head. And there are circumstances under which it may be necessary to perforate in the case of a living child. I have done it many times. It cannot be avoided on ethical grounds at all. So that the question narrows itself down to performing Cesarean section where there is absolute contraction, while if the diameter be as great as three inches, and the after-coming head has already entered and become locked, it will be necessary to perforate. And it is not always a very easy thing to do, especially when a large child has filled the cavity of the pelvis.

THE PRESIDENT suggested that, in all probability, when the body and shoulders of the child had been brought through the superior strait and the head had become locked, it would not be many minutes before the heart would cease to beat, and one would not have to crush the head of a living child.

Annual Meeting, October 15th, 1889.

The President, DR. H. T. HANKS, in the Chair.

LAPARATOMY FOR DISEASE OF THE UTERINE APPENDAGES.

DR. A. P. DUDLEY.—The principal interest in the three cases from which these specimens were obtained lies in the fact that in all there were exten-

sive adhesions. The first case was one which was operated upon September 27th, in the Post-Graduate Hospital, for double pyo-salpinx. The patient, aged 22, was taken ill on last Christmas with inflammation in the pelvis. She had borne two children, both now living; was previously in perfect health; gave a good family history. On Christmas she was taken with chills and had pain in both sides. Miscarriage took place, and she had not been well since. When she came to my clinic I felt what I thought was enlargement of the tubes on both sides, and the uterus was firmly adherent. She had been from one clinic to another. I advised an operation, to which she consented, and I removed a pyo-salpinx on either side. The patient did well, and is now convalescent, but has a small mural abscess.

The second case, Mrs. N., a private patient, was operated upon October 10th. She gave a history of pyo-salpinx, which I could feel very readily, on the left side particularly. On opening the abdomen, I found the pelvic organs so firmly matted together that I spent an hour and a half, mostly in separating the adhesions. I succeeded in getting out the tube and ovary on the right side, but on the left side I proceeded as far as it was possible without tearing the intestine, and was compelled to leave the ovary. A dark clot was removed from a small hematoma on that side. The abdomen was thoroughly washed out, thus removing many dark blood clots. The patient has since done very well. I may say that she gave a history of having been married; her husband, a clergyman, had died; she had never been pregnant; had an acute inflammation of the vagina four or five years ago, accompanied by a foul discharge and a good deal of scalding on the passage of the urine.

The third patient Dr. Bache McE. Emmet kindly saw with me last week at the Post-Graduate Hospital. He advised me not to operate for some time; but her husband had been called home by telegraph, and wished to see the operation before he went, consequently I operated to-day. The woman was 33 years of age; had been married thirteen years; was sterile. Soon after marriage she had an acute inflammation, and has never been entirely well since. The inflammation was vaginal, and was probably gonorrheal, since her husband had gonorrhea at that time. Four years ago she had a pelvic abscess, which ruptured into the rectum. It was accompanied by a great deal of bladder irritation. She had been abroad eighteen months seeking relief, had been under the care of a number of physicians at Arkansas Hot Springs, and during the summer had been seen by Dr. Bozeman and Dr. Lange, neither of whom advised an operation. Last January she had another abscess, which ruptured through the rectum, and since then she had suffered from coeeyodynia, which was her principal complaint, and for which she came here to get relief. She did not have painful menstruation. After coming into my hands, she saw Dr. Thomas, who advised an operation, although he did not speak encouragingly of it, nor did he think it would cure the coeeyodynia. She took cold during menstruation six weeks ago, and had an acute attack of pelvic peritonitis, confining her in bed since. As already stated, her husband obliged me to operate to-day or to let her go home without operation. On opening the abdomen, I found a condition which was appalling. The acute inflammation had glued the intestines to everything in the pelvic cavity; on the left side the suppurating tube and ovary presented, with the fimbriated extremity of the tube adherent to the

cul-de-sac. It was this that I had felt by vaginal touch. The right tube and ovary were not nearly as large, and, like those in the left, were perpendicular to the posterior surface of the uterus, the fimbriated extremity being agglutinated in Douglas' pouch. I was able to get them up, but the bleeding was profuse, and for that reason, and the fact that the woman was very fat, the operation was very difficult. I was afraid I should lose her. The shock was profound. She was pulseless during the afternoon, but when I saw her a little while ago she had rallied; the pulse was 84 and regular; she seemed to be resting well. I will take pleasure in reporting the further progress of the case at a future meeting. The case is interesting, as showing the uselessness of treating such cases without operative procedure when the time arrives for it. Possibly I did wrong in operating on the woman while she suffered from such acute peritonitis; but she was losing ground every day, the pain was intense, she was afraid to be kept under opiates, and her husband wanted an operation done at once. I presume the hemorrhage was due largely to the blood having been thinned by fever, and that the blood vessels were not in a condition to contract. I do not think we often see an abscess of the ovary and of the tube, and the two glued together in the manner present in this specimen.

I might add that I believe we would have lost this patient to-day had it not been that hot water was kept running into the abdomen during the operation, the cavity being douched out with four or five gallons, which offset the tendency to shock.

DR. BACHE MCE. EMMET.—Dr. Dudley has alluded to the fact that I saw this patient with him. I remember the case very well. As he has stated, there was convincing evidence of an attack of pelvic peritonitis, which was still in its acute stage, and my counsel was, as it always has been and still would be, to wait until the acute stage had subsided before operating. I believe there is danger to the patient in operating when acute inflammation still exists; we cannot tell what is the condition of the blood vessels, and by our own fault the patient may lose her life from aggravated hemorrhage, whereas if it had been delayed the operation might have saved her.

DR. W. GILL WYLIE.—In my experience, the presence of an acute attack of pelvic peritonitis makes very little difference in the result of an operation. In fact, if I had my choice I should prefer, unless the patient's blood were markedly affected by prolonged septic condition, to operate during either a general or a local peritonitis, to taking the risk of the patient passing through the peritonitis. If it was local, it might become general and kill her; or, if it was already general, it would be likely to kill her anyway without interference, or end in an abscess. The adhesions would be found softer and very much more manageable. It is time and constant, prolonged irritation that increase the strength of adhesions and make them much more difficult to deal with. Therefore I long ago adopted the rule of operating at once, if the case was one calling for an operation, having very little regard for whether there was or was not an attack of acute inflammation. I think that, unless there is hemorrhage, there is not apt to be shock. With regard to hemorrhage from adhesions, if the broad ligaments are properly and quickly tied, little time being lost in separating the adhesions, very little blood will be lost. If there be bleeding vessels in the separated omentum, they should be tied at once. The intestinal vessels should not be disturbed in separating the adhesions. This being the case, there is no other place for hemorrhage to come from, and if much blood be lost it is the fault of the operator in loosening the adhesions, and in not shaping the pedicle so that it may be tied quickly.

Again, I think that, except in certain cases, adhesions are not much

against the operation. I have operated in about two hundred and fifty cases, and I should say that in at least one hundred and fifty, perhaps in two hundred, there were dense adhesions. The cases related to-night are not very much worse than the average. In fact, such cases are very common, and it has been my experience that one can readily find the tube and ovary if he will simply bear in mind that, when not at once visible, it is probably due to being rolled backward. In all my cases I did not find it necessary in one to close the abdomen before finding the appendages. I have sometimes been obliged, on account of the adhesions, to leave a part of the ovarian tissue, but never all of it. It is not, I think, because I have not seen as bad cases as others. The fact that ovarian tissue is often left is a very important one, and I am satisfied that sufficient attention has not been given it. It is only a question of time, in such cases, for menstruation to return with many of the old symptoms. It is our duty, therefore, when possible, to secure every portion of the ovarian tissue. I do not think the tube is so important.

DR. DUDLEY.—I appreciate the kind remarks of both Dr. Emmet and Dr. Wylie. I admit that, in my own opinion, I ran great risk in operating in this case to-day, and I shall be very thankful if her life is spared. I think it would have been better if I could have waited two or three weeks longer; yet another attack might have occurred and necessitated further postponement of the operation. So far as ability to break up the adhesions in the second case was concerned, I may say that in the attempt to do this I lifted the patient bodily from the table. One adhesion could not have been broken without tearing the intestine in two. I think the patient will be benefited by the separation of the adhesions to the extent I was able to do, even on that side. The bowels, of course, will be kept moving freely to prevent recurrence of the adhesions. I should prefer to do a second laparotomy to going on trying to separate the adhesions under those circumstances, for the patient was already nearly in collapse and required injections of whiskey to keep her alive. I have proved the wisdom of such a course several times this year by doing laparotomy a second time, and in one instance a third time. In the latter case the third operation was done for hernia. In the first instance the case was one of pyo-salpinx, and at the second operation I broke up some most powerful adhesions; yet when I inserted my fingers through the abdominal wound and examined the pelvic contents at the third operation, everything was found free. And I think that in the second case which I have related this evening the patient will stand a better chance to have the one tube removed at a second operation than if I had continued with the first, for I had already torn the intestine and sewed it up, and further attempts would certainly have torn it in two. In the third case I felt somewhat as did Dr. Barker when he said: If she gets well I will never operate on another patient under like circumstances, if I can help it.

DR. WYLIE.—Regarding the separating of adhesions, I do not think it is usually necessary to use great force if we go in the right direction, that is, enucleating and unfolding the tubes with the ovaries. Where there are dense adhesions to the intestine, we should not run the risk of tearing it by directly breaking them up, but should reach the ovary at some point where the intestine is not adherent, and begin enucleating it from that point. As I said before, it may be necessary in some instances to leave a small portion of the ovary or tube, or rather some outer adhesion of it, attached to the intestine, so as to avoid tearing the latter. But it seems to me that, by following the method of enucleation, there is scarcely any case in which the tube cannot be got out, and that, too, without using a great deal of force. The operator has an advantage if his finger nails are long, or he may even use the knife or scissors to separate a narrow band; and once having got into the diseased mass, he can enucleate it almost completely by the unfolding process.

THE PRESIDENT.—The question whether we shall or whether we shall not operate immediately after an attack of pelvic peritonitis is one of very great interest to me. I think the remarks of Dr. Emmet are eminently just,

and Dr. Dudley has shown that he appreciates that fact in his further discussion of the subject. It seems to me our patients will be in much better condition for an operation some months after an acute attack of pelvic peritonitis than during its existence: first, because they will be in much better condition, if they are rightly cared for during the interval; second, because there will be less congestion. We certainly ought to be better able to operate after the general congestion of the inflamed and adjacent organs has been reduced. As bearing on the remarks of Dr. Wylie, I fully realize that it is occasionally possible to separate the adhesions of the tube and ovary, when on looking at the case we might think it impossible. Yet on one or two occasions I have left the tube and ovary on one side after I had exerted all the force which I thought I was justified in using; as in Dr. Dudley's case, the patient's condition would not permit of longer efforts, consequently I sewed up the abdominal wound, the patient got well, after three months I did a second operation, and her symptoms then disappeared. I am satisfied that in the case which I have in mind I was able to tear up the adhesions at the second operation with greater ease than it could have been done three months before when the abdomen was first opened. There must, then, have been a change effected during those three months of judicious treatment.

DR. WYLIE.—I would like to say a few words more. So far as the condition of the patient is concerned, unless, as I have said, she has been in a prolonged state of sepsis, the mere strength or physical condition should have little influence in operations where there is local peritonitis. I am satisfied from pretty long experience that it is not the weak, delicate women that we lose. In fact, there are only two great causes of death in these cases. If we do not have hemorrhage or sepsis, we will not be likely to lose our patients; and strong patients are about as liable to these as are weak ones. I am, therefore, satisfied that the operation should be done at once, unless there has been prolonged sepsis to weaken the patient very much.

DR. DUDLEY.—If I may be permitted to make a closing remark, I would say that in this case of acute local peritonitis the pelvic viscera were so congested that wherever an adhesion, no matter how fine, was broken up, such an oozing of blood would take place that it could not be checked by ligature. From behind the uterus the blood oozed as if it came through a piece of cloth; the same was true of the adhesions to the intestines and elsewhere. The stumps were tied quickly, the broad ligaments were enucleated from both sides; there was no hemorrhage from their pedicles as they were ligated, but the blood oozed from all the tissues which could not be ligated. In fact, there was nothing to ligate in order to stop it. The abdomen was kept open nearly an hour, with hot water pouring into it of a temperature of 120° or 125° F. It is in such hemorrhage that the danger which Dr. Emmet has spoken of lies, and it is possible that I might have avoided it could I have postponed the operation two or three weeks.

DR. H. C. COE.—I have just lost a case nearly identical with that of Dr. Dudley, because, I think, of operating too soon after peritonitis. The oozing of blood could not be controlled entirely, and the patient succumbed to prolonged shock. At the autopsy made to-day a quantity of fluid blood was found, with moderate peritonitis.

DR. EMMET.—I think the condition found by Dr. Dudley and Dr. Coe is the rule in such cases. Where we can recognize the pelvic roof as quite firm from recent inflammation, the parts not movable but felt as one mass from inflammatory exudation, the patient suffering pain on the slightest pressure against the roof of the pelvis—in such cases, it seems to me, it is absolutely wrong to operate. We know what the condition of the local circulation must be. Nor can we feel certain, as Dr. Wylie seems to, that our patients will very likely escape death, if it does not take place from sepsis or hemorrhage. As Dr. Coe pointed out in a paper not long since, death may be due to heart failure or other condition, when sepsis would have been pronounced the cause had not an autopsy proved its absence.

DR. H. C. COE read a paper on

LAPARATOMY FOR INTESTINAL OBSTRUCTION FOLLOWING HYSTERECTOMY.¹

DR. WYLIE.—The paper is certainly very interesting and clearly written. My experience with vaginal hysterectomy has not been very large, but thus far I have had no serious complications follow. My method of operating has not been the one usually adopted, at least in New York. I have adhered to the ligature simply because in my hands its use has never been followed by death. Having done so well with it, I have not cared to change. The main difference between my way of operating and the usual method is that I tie the vessels quickly, as soon as I can reach them, then cut away the tissues and retie. Operating in that way, I can feel almost certain that there will not be hemorrhage subsequently, the tissues having retracted all that they can. Another advantage which I have found in this method is that the edges of the stump can be trimmed and fewer stitches and ligatures are requisite. In some cases I have used not more than five ligatures, while in some others it was necessary to employ six or seven.

I can understand how this complication may arise, for in two or three of my earlier cases the intestines bothered me somewhat, while putting on the second ligatures, by coming down into the wound. In my first series of laparatomies I not infrequently had complications, due largely, I think, to not moving the bowels early after the operation. In vaginal hysterectomy I have always caused a movement to take place on the second day, thinking that if there was any tendency to the formation of adhesions it would be much lessened thereby. I think that early movement of the bowels unquestionably lessens the tendency to intestinal obstruction; whereas if this movement be postponed, adhesions form and become too strong to be loosened in that way. Having caused a movement on the second day, it should be continued once a day subsequently.

DR. W. M. POLK.—I rise to add another case to the list of those of intestinal obstruction following operation. The patient was one from whom the uterus was removed without any trouble, ligatures, not forceps, being employed, but the intestinal prolapse was due to removal of the gauze. The gauze was applied at that time in the manner that most operators were using it, so as to about fill the whole lumen left after removal of the uterus, partly with a view of drainage and partly with a view, at that time, of holding the intestines in place. When I removed the gauze, to my great distress a coil of intestine followed. I washed it at once and replaced it. The patient had been doing very nicely up to that time, but within twenty-four hours afterward she had evident symptoms of intestinal obstruction, differing in no respect from those described by Dr. Coe, and died about the sixth day from the operation. Of course the result could not be attributed to the operation, for while the use of gauze was a part of the procedure at that time, yet it was only a transitory one, being subsequently abandoned.

The point made by Dr. Wylie is, I think, a most valuable one. I think we may assume, as Dr. Coe has done, that we are particularly prone to intestinal obstruction from the tendency of the gut to prolapse during the vomiting which so frequently follows the use of ether. Now, the early movement of the bowels operates strongly to prevent the formation of obstructive bands. It seems to me the points made by Dr. Coe with regard to the technique of the operation were very just indeed. We are obliged sometimes to use a great many forceps in these cases in order to control excessive hemorrhage. In my fourteenth or fifteenth case, operated upon two days ago, I had to employ as many as eleven pairs. This, we know, is a defect in the operative procedure, and increases the likelihood of intestinal adhesions and obstruction occurring in the manner indicated by Dr. Coe.

In this connection I would like to speak of a somewhat different method of applying the forceps from that commonly used. Take a case in which the uterus is as free as it should be to justify vaginal hysterectomy, the pelvis being reasonably free from adipose tissue, and you have a condition

¹ See original article, page 144

which is singularly fortuitous for the application of one, two, or more pairs of forceps. But there is not infrequently a thick pad of adipose tissue between the vagina and pelvic wall, and if you attempt to stop the hemorrhage by the forceps you will have to use many pairs and grasp and crush much tissue needlessly. I present for your inspection the last modification which I have made in the forceps applied to the broad ligaments. The blades have been broadened, and more spring has been given them. The instrument is curved, and shaped much like the one used by laryngologists for removing foreign bodies from the larynx, but possesses longer jaws and works more upon the spring principle. I make my incision through Douglas' pouch, pass my finger in through the opening, across the uterosacral ligament to the base of the broad ligament; the uterine artery is readily felt; the forceps is then passed up, hugging closely the vaginal wall, include the uterine artery, and is clamped. There remains then only the broad ligament to be clamped. Only four pairs of such forceps will be necessary, however thick the vaginal roof may be. In thin women, the forceps ordinarily employed will do.

DR. CLEMENT CLEVELAND then read a

MEMOIR OF JAMES BRADBRIDGE HUNTER.

Dr. Hunter was an honored member of the Obstetrical Society for nearly twenty years. For his worth and services he has a claim for a biographical and personal memoir in its proceedings.

It was with much misgiving and some hesitation that I decided to accept the invitation of our President to prepare a sketch of the life of our departed friend. But many kind offices and favors received at his hands have brought me close to him, and I felt that an acquaintance of many years, the high privilege of association and long intimacy with him, ought to enable me to say something worthy of his memory.

Something has been said, by other friends, of his life before he entered upon his professional career in this city—of his early life, the forming period of his character, and of his services to the country in the civil war. I have, therefore, decided to confine what I have to say to a personal reminiscence, comprised in a period of little more than twenty years, the early part of which was the season of his struggles, toils, and ambition to win his place, to train his powers, and lay the foundation of his success.

When I first knew Dr. Hunter—now gratefully remembered as my earliest professional friend—he was living on West 34th street beyond Sixth avenue. He was doing a little practice—just enough, with his literary work, to pay his expenses. He did not care for more. He was interested in gynecology, but from the bent of his conversation it was evident that his mind was turned more in the direction of literary pursuits.

Upon the resignation of Dr. Dunster, he had become the editor of the *New York Medical Journal*, which he was then successfully conducting. In this his ambition seemed to be centred. In its work he was perfectly happy and content. It gave him employment which in those days was most congenial to his tastes. As time went on, however, he became more identified with the practice of gynecology, having in 1871 been appointed by Dr. Emmet an assistant surgeon at the Woman's Hospital; and a year later, when a radical change was made in the attending staff, Sims, Peaslee, and Thomas being added to it, he was retained by the latter gentleman as his first assistant. Soon after this it was noticeable to his friends that a change was coming over him, that he was taking a deeper interest in his

hospital work, and was not as indifferent as formerly to the practice of his profession.

Besides his position at the hospital, he had become an assistant to Dr. Thomas at his Friday Clinic at the College of Physicians and Surgeons. From these two sources his opportunities for diagnosis and clinical study were vast, and he made good use of them.

In 1878 he became surgeon to the Woman's Hospital. He assumed the position with great satisfaction and entered upon his duties with enthusiasm. During the eleven years of his service, his devotion to and interest in this institution never wavered. The Woman's Hospital was of great service to him, and this he ever acknowledged; but he brought it in debt to him to a degree equally commensurate with the advantages he derived from it. With his work there and his growing private practice, he soon had diligent employment for every moment of his time.

He was one of the projectors as well as incorporators of the New York Cancer Hospital, and in its organization took a prominent part. His qualifications for such work were pre-eminent, and his colleagues in the management of the institution depended greatly upon his judgment and advice. His loss to them is almost irreparable.

He was the founder and first president of the Practitioners' Society, which has had a prosperous and successful career from the moment of its inception.

He was twice elected president of the Obstetrical Society, and always took the deepest interest in its meetings. This was evinced by his constant attendance, the cases he presented, and the part he took in the discussions. As we look back on all these years of his membership, it would be difficult to select a name that had answered more frequently to the roll call. The cases he presented and the papers he read before the Society were many, and were never prolix and tiresome. What he had to say was uttered in the shortest, most concise sentences—uttered for the purpose of imparting information, and for no oratorical display.

He was president of the New York Polyclinic and professor of gynecology in the same institution. As a teacher he was held in the highest esteem, for he had the gift of imparting knowledge in an eminent degree. He was a born artist, draughtsman, and inventor, and exhibited the aptitudes and faculties of these accomplishments when he had occasion to exercise them in his professorship and practice. He had the true artist's power of expressing in a few lines upon the blackboard the particular fact he wished to illustrate. His classes were always large, and as they were composed of graduates in medicine, men of mature judgment and experience, it was an evidence that he was a teacher worthy to be listened to.

As a surgeon Dr. Hunter was a beautiful rather than a brilliant operator. In all his operations, whether minor or capital, he was most careful and painstaking. In the most trying and desperate cases he exhibited the utmost coolness and was never at a loss for an expedient in an emergency. His plastic surgery was faultless, and in this, as well as in his abdominal work, his technique was perfect. It was a great pleasure to witness his work and assist in his operations, he did everything so neatly and so thoroughly well. There was great originality in his work. He was held by no rigid bonds of custom, but chose for himself methods entirely his own. He certainly

enjoyed exceptional opportunities and advantages, but he made the most of them and acquired a skill as an operator and diagnostician equalled by but few.

In forming and giving an opinion he was most careful and conservative, and never allowed his specialty to warp his judgment. He never made a hobby of gynecology. He was broad enough to look at disease through other than gynecological spectacles. He had decided opinions, but usually kept complete control of his words in the expression of them. He had always a remarkably clear perception of things. His opinion carried great weight, because his wise judgment kept him from imprudent speech or action. His professional eminence, his scientific and scholarly attainments, the range and fulness of his intellectual powers, could not fail of securing to him the fullest respect of his professional brethren.

As a writer he was distinguished for the independence and originality of his thought. His style was attractive from its comprehensiveness. At the time of his death he was engaged upon a work of operative gynecology which, from his well-known care and thoroughness and extensive experience, would doubtless have been one of great practical value. He was the author of many papers, which have been extensively read and quoted.

In his relations to his subordinates in the work of the Woman's Hospital he was ever kind and considerate. He was always punctual and expected every one else to be, but he was no more exacting upon others than he was upon himself.

From childhood he had been the victim of sick headache. Scarcely a week would pass without an attack, and these headaches were usually so severe as to utterly incapacitate him for work. Nothing seemed to give him more than temporary relief. He never complained, but bore his cross with meekness and philosophy. The wonder is, with an affliction that would have broken down most men, he could accomplish the enormous amount of work that was laid upon him.

Dr. Hunter had for years been an incessant toiler. Not only was his time fully occupied in its every moment during the winter months, but he had for many years passed his summers at Long Branch, where he went, not for rest, but for work as engrossing as his practice in the city. For the past two years of his life he had given up his summer practice at the sea-shore, with the intention of taking complete rest and recreation. But work came to him to do, and he accepted it, passing most of his time in the city.

He was a constant student, and at night, when most men were asleep, was devouring some book or reading from the journals that which was most useful to him as a specialist. Many times during the past few years, on passing Thirty-third street late at night, no matter what the hour, I have seen the lights burning in his study. He never took more than four or five hours' sleep. No matter how late he retired, it was his invariable rule to rise early. Fatigue he would never acknowledge. He declared that he needed less sleep than most men. His friends protested and insisted that it was a mere notion; that if he would take the sleep, he would be the better for it. But he would merely smile and say he was perfectly well and was never tired. But he was unquestionably an overworked man and showed it in his face and bearing during the past winter.

He had just reached the point in his life when his success was full. His

operative practice had become extensive and remunerative. But, like most men, it was his lot to fall prematurely by the wayside of an unfinished career.

He was a physician whom his patients loved, confided in, and held in loyal esteem. He was ever the kind and faithful ministrant to the poor. His charities were many and generous. As is always the case, the more eminent and efficient a man is in his profession, the more frequent and earnest are the demands upon him for gratuitous advice and attention; and in this respect Dr. Hunter was no exception.

All fair-minded men will accredit him with the highest qualities of independence, candor, and rectitude of mind.

He carried with him the respect, the attachment, and sincere regard of many friends, who cherished and loved him.

To his intimates, who enjoyed his confidence, his character was a most attractive and lovable manifestation of a thoroughly upright, pure, and whole-souled man. He certainly was favored in temperament, in facility of self-control, in equability and affability of nature.

Our acquiescence in the just order of Providence alone tempers the regret and sorrow with which we regard the departure from life of one whom we have loved and honored.

It is well that he has lived to complete in his character a model of professional excellence. It is well that he has died leaving behind him the record of a task well done.

INTESTINAL OBSTRUCTION.

THE PRESIDENT.—I will show this specimen, and would ask Dr. J. Blake White to give a brief history of the case. I first saw the patient in consultation last Friday evening. She was suffering apparently from peritonitis and obstruction of some portion of the intestine. The case went on from bad to worse, and at the post-mortem a pyo-salpinx and an abscess of the vermiform appendix were found in one mass, the adhesions joining the two having been perforated and both having ruptured into the abdominal cavity. The case possesses some interest in connection with Dr. Coe's paper. I will speak of a point which was of great interest to me, leaving the general history for Dr. White to relate.

The patient had vomited stercoraceous matter the morning of the day I saw her. On my arrival at five o'clock in the evening, having been called to do laparotomy, she was somewhat better; the pulse was only 90, the temperature less than 100° F., and there was not that collapse which would indicate the necessity for an immediate operation. Moreover, the room was cold and there were no means of warming it, consequently we decided to wait until the next morning. When morning arrived, however, she was decidedly better, and we concluded to wait until the afternoon; but when we arrived at 4 P.M. she was beyond the power of any surgical operation.

DR. J. BLAKE WHITE (*present by invitation*).—The patient was a married woman, age about 47. About eight years ago she had a severe attack of peritonitis. She had a second attack about a year ago; that was followed by secondary pneumonia. On October 6th she was seized with violent pain in the left iliac region. On October 7th she was first seen by me, suffering from nausea, vomiting, and gaseous eructations. There was extreme tenderness

all over the abdomen; tympanites was marked. No tumor was apparent. In consequence of the tympanitic distention of the abdomen, no iliac dullness was made out. A digital examination per vaginam and rectum was made, and a hard mass was felt, non-fluctuating, situated somewhat to the right side, forcing down the uterus and firmly pressing upon the rectum. The mass was sensitive to the touch, although it did not appear to be more so than the other side of the cervix. The patient gave no history of rigor, and the temperature was at no time over 101° F. October 10th she vomited stercoraceous matter, and it was in the evening of this day that Dr. Hanks first saw her. Dr. George E. Abbott was also present. The vomiting not having continued, and the patient having retained some nourishment, it was thought best to delay laparotomy until the following morning, about eight o'clock, when the surroundings could be rendered more favorable for undertaking it. October 11th, at 8 A.M., a consultation was again held. The temperature was 98.5° F., the facies much better, there was little pain, the tympanites had somewhat subsided; there was no vomiting, but there had been some gaseous eructations from the stomach; she retained nourishment, and had had one or two slight actions of the bowels produced by castor-oil enemata, and had passed some gas per rectum. The operation was then postponed, her condition being so much better, and all thought she might possibly recover without an operation. Saturday afternoon, however, she became rapidly worse, was taken with collapse, and died.

A point of interest in the autopsy which the President did not mention was a peritoneal band obstructing the ascending colon, which was probably the principal cause of obstruction. As the President stated, there was a pyo-salpinx, inflamed vermiform appendix, and an abscess sac at that portion of the bowel.

THE PRESIDENT.—The case was doubly interesting to me after the post-mortem was held, when I remembered that she had given no history of rigor, no history of sweating nor of fever, yet we found as the actual cause of the trouble a pyo-salpinx and abscess about the vermiform appendix. The lesson may be summed up, perhaps, in these words: If called to a woman who has had history of pelvic peritonitis before, who is suffering undoubtedly from intestinal obstruction in the region of the right iliac fossa, and who has had stercoraceous vomiting, I should do laparotomy at once, even though the subjective symptoms had somewhat improved on the day I was called to see her. Others may adopt the same rule in case of a young child or man. In women, I believe, in the vast majority of cases of this kind, the cause is in the region of one tube or ovary, and if they have symptoms of obstruction, especially stercoraceous vomiting, we are justified in making an exploratory incision, although the patient may have apparently improved.

DR. WYLIE.—I do not think we ought to wait for stercoraceous vomiting. I was called to a case in Brooklyn in which there were colicky pains and other symptoms of obstruction, not going, however, so far as stercoraceous vomiting. I saw her on the second day, and agreed to wait twenty-four hours, but said I would have nothing more to do with the case unless consent was given to an operation then. The hour having arrived, I did operate, divided a band completely obstructing the intestine, and the patient recovered. I take the ground that we should treat cases of general peritonitis in much the same way as gynecologists have for several years treated local peritonitis. That is, if the symptoms are serious, and certainly if there are any signs whatever of intestinal obstruction or the formation of abscess, we should not wait until the case has become hopeless, but should operate. I had taken that ground some time before I had had an oppor-

tunity of testing whether it was tenable in men. I was told by surgeons that it was all very well to operate when a tube or an abscess had burst, but that in intestinal obstruction it was a different matter; that there it could not be done.

I was very much interested in this question during Dr. Agnew's illness, and the next winter I succeeded, through my assistants, in getting two well-marked cases of general peritonitis. One was due to the bursting of a perityphlitic abscess on the fifth day. I operated about six or eight hours afterward, when the man had all the symptoms of general peritonitis. I opened the abdomen in two places—first over the abscess, and found pus; then in the median line—broke up all the adhesions, washed out the cavity with hot water, took out flakes of pus as thick as my finger, and the man made a complete recovery. I succeeded in getting another case in which the perforation was direct from the cecum. The man was seized on a Tuesday night with severe colic; could not be relieved by pretty large doses of morphine; the bowels would not move. I saw him on the second day; the symptoms were not at all dangerous, the pulse was good, the temperature was not very high, but there was unmistakable evidence of general peritonitis and intestinal obstruction. In that case I opened the abdomen, and found an immense quantity of pus and general peritonitis. I made a counter-opening over the cecum, washed out the pus cavity, and could distinctly see where the cecum had been perforated and become covered over with whitish lymph. There was no escape of fecal matter. I put in a drainage tube, and the man got well. I have elsewhere reported one of the cases, and will report the other more fully at some future time. I take the ground, therefore, that general peritonitis should be treated like local peritonitis. The operation is not at all difficult, the adhesions are easily broken up, and the patients, instead of succumbing to shock, actually are better after the operation. In one of my cases the temperature fell during the operation and the pulse became better. I am satisfied that if these cases had been let alone, or a drain simply inserted, both patients would have died. I believe gynecologists should compel general surgeons to operate. If they will not, we will operate for them.

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Stated Meeting, November 5th, 1889.

The President, J. E. JANVRIN, M.D., in the Chair.

REMOVAL OF THE ENTIRE UTERUS FOR FIBROID.

DR. H. J. BOLDT.—The first of the two specimens which I have to present is an interstitial uterine fibroid which was removed two weeks ago by total extirpation of the uterus. The method consists in first opening the abdomen, turning out the tumor with uterus, tying the pedicle and dropping it. The remainder of the uterus is then removed as in ordinary vaginal hysterectomy, leaving no stump whatever.

The woman from whom this specimen was obtained was thirty-two years old. She had suffered a number of years from hemorrhages and constant,

intense pain, becoming the last few months an opium habitué. Other treatment had failed. Electricity had been tried, and while it had proved of considerable benefit in other cases, in this one it had very little influence in the control of hemorrhage. Removal of the tumor and uterus was then decided upon. The patient made a good recovery. This is the third case in which I have operated in this manner. Two did very well. One had acute mania, and, as she could not be kept in the house, was sent to Bellevue Hospital on the seventh day.

MEDULLARY CANCER OF THE UTERUS; HYSTERECTOMY.

The second specimen was removed from a lady 60 years of age, who at the time was also suffering from both pulmonary and laryngeal phthisis. During the past four months she had been troubled considerably by uterine hemorrhages and an extremely offensive discharge. The discharge was so foul that she was not permitted to enter the dining room at the boarding house where she was stopping. The specimen, obtained by curetting, was examined by Dr. C. Heitzman, who pronounced it a case of cancer of the uterus. On examining this specimen, I find a roughness and degeneration of the mucosa, but it does not seem to present the marked changes which one would expect to find where there had been so profuse and offensive a purulent discharge. Hysterectomy was performed five days ago. The patient is doing well.

I may state that, in the first case related, the clamps were removed within twenty-four hours, and in this case within thirty-six hours, without secondary hemorrhage taking place. My reason for removing the clamps so soon is that the handles invariably produce some gangrene of the labia, no matter how much they may be protected by gauze or cotton, the extent of the gangrene depending upon the length of time the clamps are left on. I have not seen any bad result from removing them within twenty-four or thirty-six hours, although there is a case on record in which secondary hemorrhage occurred after removal of the clamps, which had been left on five days.

Replying to a question by Dr. Dudley, Dr. Boldt said the patient had passed the menopause about eighteen years.

DR. W. GILL WYLIE.—I would ask Dr. Boldt whether, in extirpating the uterus in that manner, he always prefers to open the abdomen first. I have found it a simple procedure, where the cervix could be brought down, to open the cul-de-sac into the peritoneal cavity posteriorly, slip the finger forward, tie the uterine arteries, then loosen the vaginal junction freely, afterward open the abdomen, lift up the entire mass, and tie the broad ligaments. The advantage of this method is that the broad ligaments can be lifted and tied entirely outside the abdomen. One can then see just what he is doing, and run no risk afterward, in taking out the stump below, of loosening the ligature. I have performed this operation with perfect success in a case of myxomatous tumor larger than the tumor presented. Where this operation cannot be performed, I should think it would be rather safer to do that proposed by Dr. Stimson; that is, to tie the broad ligaments, or put on the forceps, cut them, lift the uterus forward, dissect out the uterine arteries and tie them separately. That procedure is not at all difficult where the cul-de-sac can be readily reached from above. It seems to me the operation described by Dr. Boldt would be attended by the risk of loosening the ligatures during the vaginal steps of the operation.

DR. A. P. DUDLEY.—I would ask Dr. Boldt what advantage there is in removing all the cervix, in a case like the one related, over that form of hys-

terectomy which leaves a part of the cervix as a stump, the peritoneum being made complete by suture above it. Vaginal hysterectomy, as we know, subjects the patient to some danger of hernia and intestinal adhesion. In the specimen shown there seems to be a very small cervix, one in which the uterine arteries apparently could not be got at easily through an abdominal incision, and it would, therefore, be interesting to know why the whole uterus was removed.

DR. WYLIE.—The cases in which I pursued the course which I have just mentioned were those of myxoma or cancer, and consequently the entire organ had to be removed.

DR. BOLDT.—In reply to Dr. Wylie's question, bearing on the rapidity of the operation, I do not know that I could have operated any faster in the way described by him. In this case the operation consumed less than three-quarters of an hour, while in both the others it was completed within that length of time. I tied the fibroid off, just as we would tie the pedicle in doing an ovariectomy, and then proceeded immediately to do vaginal hysterectomy. The cul-de-sac was opened very rapidly, requiring but a few moments, the adhesions and attachment of the bladder were soon loosened, and the operation shortly completed. During the vaginal steps of the operation the abdominal incision is left open, protected by a disinfected towel. One knows by the touch precisely what he is doing when operating in this manner. At the close the vagina is loosely packed with iodoform gauze. In thirteen cases of pure vaginal hysterectomy I have had none of the accidents to which Dr. Dudley says the patient is liable, and I therefore hardly take those into consideration. While the method to which Dr. Dudley refers is comparatively safe, yet the patient is exposed somewhat to sepsis, which can be avoided by complete hysterectomy. Vaginal hysterectomy where no adhesions exist and there is no infiltration of the parametria, requires only half an hour, or even less time when clamps are used.

SILKWORM-GUT SUTURE REMOVED FROM A SINUS AFTER THREE YEARS.

DR. MALCOLM McLEAN.—I have here an insignificant specimen which I present as a basis of some clinical remarks. It is a small piece of silkworm gut which remained in the recto-vaginal septum three years, keeping up a fistulous opening and exfoliation of tissue which gave rise to the suspicion of epithelioma. I was sent for this reason to see the lady in Philadelphia, and found this piece of suture where I had three years ago restored the vaginal septum. I thought I had removed all the sutures after the operation, but evidently had overlooked this piece, which continued afterward to keep up a fistulous tract and gave rise to the suspicion of epithelioma. Its integrity seems to have been preserved perfectly during those years.

DR. DUDLEY.—This case is a very interesting one; it speaks volumes in favor of certain articles as sutures. It speaks well, for instance, for catgut, if we can get a kind which will answer the purpose. As bearing on this subject, I would mention two cases in which I made abdominal section for pyo-salpinx, doing the operation in one case seven months ago, in the other five months ago. I was as clean about the operation as possible. Silk was used which had been boiled more than an hour in a solution of bichloride, and it was taken directly out of the disinfectant fluid when applied to the pedicles. In one of the cases I performed hysterorrhaphy, fastening the uterus up after removing the pyo-salpinx; in the other I could get out the appendages only on one side, and there I used silk. In both cases a fistulous tract remains, extending down two and one-half inches into the pelvis, and I feel sure that the silk is the cause. Yet I dread making a second laparotomy to remove it. I have tried every other means to cause the sinuses to heal, even touching them with a piece of nitrate of silver, but without success. The patients, however, are able to be about their work.

Such cases as these have led me, although perhaps at some risk, to use

catgut wherever I can in ligating the pedicle in cases of abdominal section. The evil effects from the silk were due probably to its coming in contact with pus during transfixion of the pedicle. The case of Dr. McLean's emphasizes the fact that silk is not absorbed and sometimes does not become encapsulated. If, then, we can get an animal suture or ligature which will hold until the vessels become plugged by clot, I see no reason why it should not be used.

DR. WYLIE.—It seems to me that Dr. Dudley, in favoring catgut, has been hardly fair toward silk. Some late scientific experiments made in Germany have shown very clearly that catgut is a very unreliable substance; that it may become absorbed in a few days. Silkworm gut, like silver wire, is hardly absorbable at all; but silk, if it is clean, will be absorbed in about sixty days. The suppuration which Dr. Dudley has spoken of would take place with catgut just as surely as with silk. If the ligature is septic before it is inserted, or becomes so while being introduced, it will act as a foreign body, whether composed of silk or catgut. When there has been suppuration in the track of the ligature, I have had almost uniform success in dilating the sinus and with the Sims forceps reaching down and removing the silk, after which healing has taken place at once. There would be the same suppuration under like circumstances if catgut were used, although it might not persist so strongly.

DR. DUDLEY.—That is just what I am after.

DR. WYLIE.—But in laparotomy you cannot go after those points. The main point is to save the patient's life first, even though something be used which may remain longer if it act as a foreign body afterward. It has been fairly proven that catgut is very uncertain.

DR. BUCKMASTER.—I would ask Dr. Dudley whether the silk used was waxed. That, I think, is an important point, as Dr. Skene has shown. It is easy to demonstrate that unwaxed silk has a decided capillary attraction, by placing some in water with the end hanging over the edge of the vessel. If the ligature is in a septic cavity, it can be readily conceived that septic matter might pass through the ligature itself in small quantities. But if, before using it, the silk is properly prepared in wax, its capillary qualities will be overcome and at the same time it will be quite as unirritating as before. I have been making some experiments lately with catgut, waxed silk, and unwaxed silk, and I have found that waxed silk is the least irritating and gives the best results. I have also found that ordinary silk is much better than catgut, being attended by much less suppuration.

DR. CLEVELAND asked whether waxing the silk had any influence on its absorbability.

DR. BUCKMASTER.—I do not think the silk is as readily absorbed when waxed. I believe it is still a question whether silk ligatures and sutures merely shred out and disappear, or whether they are really absorbed.

DR. POLK inquired how he sterilized the wax.

DR. BUCKMASTER replied: By keeping the wax just short of the boiling point for from five to twenty-four hours. It was a troublesome process.

DR. H. J. BOLDT.—I wish to say a word for catgut. I have used it in many cases in ligating the pedicle. If it is prepared in the manner I have described at this Society, it will not be absorbed within a few days; it will not be absorbed entirely for two or three weeks. But grant that it may be absorbed within a few days, if we make sufficient pressure on a vessel for a few days there will be no danger from secondary hemorrhage. That is all that is required of the ligature. I have used catgut in a large number of cases, on far more than one hundred pedicles, and have had no trouble from it. I resorted to catgut for the reason that I had the same experience with silk which Dr. Dudley has related to-night. It may be asserted that the silk was not aseptic. I can only say that I had taken every precaution to make it so, boiling it five hours in a five-per-cent solution of carbolic acid, and keeping it in an antiseptic solution until it was used. Yet, in one case in which I used it, just such a fistula resulted as Dr. Dudley has spoken of, and for that reason I resorted to catgut and have had no occasion to abandon it either as a ligature or suture. Regarding the absorbability of silk, I may

grant that fine silk will become absorbed in sixty days, but I have not been able to prove in any case that it entirely disappeared by absorption. I should not, therefore, like to see catgut run down. It is not unlikely that where it has failed to yield satisfactory results it was not properly sterilized. Dr. König made a number of experiments with catgut, and discards it now, although he believes it is proper to use it when sterilized by the dry process. I have tried the dry process, but prefer the method of rendering it aseptic which I once previously described. Catgut should not be discarded.

DR. DUDLEY.—I do not wish to take the time of the Society, but it is a fact worth recalling that in vaginal hysterectomy Dr. Wylie and other surgeons speak of using the clamps, which are removed at the end of twenty-four hours, and yet no hemorrhage ensues. Now, if the clot formed after crushing the tissues and the use of the clamp during that short period of time will prevent secondary hemorrhage, it would seem that catgut, which, when well prepared, will retain its integrity four or five days, ought to accomplish the same object even more effectually. I think the danger from catgut has been simply this, that the pedicle has been tied too quickly, before the ligature has had time to bury itself into the tissues, and that accidents, therefore, have been due to the fault of the surgeon and not to any fault of the catgut. In accounting for my results with silk in these cases, I can say that it was made perfectly antiseptic, if it is possible to make it so by boiling in a solution of bichloride of mercury. I do not think that waxing it has any advantage, for the wax will become absorbed as quickly, yes, much more quickly than the silk itself. Besides, the wax does not permeate the fibres, but lies on the outside of the silk. While the silk which I used was antiseptic prior to the operation, yet in transfixing the tube it probably came in contact with pus and in that way became septic, notwithstanding the stump was cauterized.

To emphasize the fact that silk remains a long time, I would say that a few days ago I made a third laparotomy upon the case mentioned, for hernia, and, being curious to know what the condition of the broad ligaments was after the operation for double pyo-salpinx, I put my finger in and examined them. It was several months after the operation, yet the knot of silk was present in both broad ligaments. I believe that if twisted silk is used, it is not absorbed at all; that it becomes covered over and remains an inert body. But if in its application it is passed through pus, there is danger of a sinus forming. For that reason I wish to speak well for catgut. I think we can use it with safety. I have used it and nothing else for two years, except in cases of large pedicles.

DR. JANVRIN.—Some fifteen or sixteen years ago I had opportunity, for three or four years, of making autopsies in cases which had been operated upon for the removal of ovarian tumors. In three or four cases which I remember very distinctly, the ovariectomy had been performed three or more years before death, yet the silk ligature was found buried in the tissues, perfectly intact, no absorption whatever, as far as I could judge, having taken place. Dr. Peaslee at the same time was making some experiments regarding the length of time necessary to constrict the pedicle of an ovarian tumor in order to be insured against secondary hemorrhage. For that purpose—and I think I mentioned this fact at this Society a few months ago—he used a very small silver-plated tube, passing it down into the abdominal cavity, securing the pedicle around it, transfixing through little perforations of the tube with silk, then bringing the upper end of the tube out of the abdominal incision at its lower angle, leaving it there as one would a drainage tube. Of course that was before the days of antiseptic surgery. He passed a little knife down the tube at the end of forty-eight hours, releasing the tube and the ligature, allowing the pedicle to drop back. My recollection is pretty positive that in not one of those cases, ten or fifteen in number, did secondary hemorrhage take place. His experiments were based upon other experiments upon animals by Dr. Speir, of Brooklyn, regarding the time necessary to keep certain blood vessels constricted in order that secondary hemorrhage would not take place.

DR. W. GILL WYLIE then read a paper on

THE SURGICAL TREATMENT OF PERITONITIS.¹

DR. H. T. HANKS.—It seems to me that the subject which Dr. Wylie has brought before us this evening is one of very great importance—indeed, the most important which could be considered at this time. The question of when to operate in septic peritonitis, of differentiating between the cases which require an operation and which do not, is just beginning to receive careful and methodical consideration. I have been exceedingly interested in the subject as it has been discussed in Dr. Wylie's paper, and on several occasions when specimens were presented here the past few years. But we must remember, in debating whether to operate or to refrain from operating, that there are cases of peritonitis which look exceedingly severe, and which are so, yet which recover without an operation. I regret that I have refused or neglected to operate in several cases during the last few months, yet when I look the whole field over I remember having had half a dozen cases of undoubted localized peritonitis and four or five cases of localized peritonitis which had become general, all of whom are well to-day without an operation. I came directly here to-night from the house of a lady who seven years ago had what I regarded as a perityphlitic abscess; one was developing at least. I called Dr. Sands in consultation regarding the advisability of operating. He said to wait, and continue the cupping, etc. An operation was not performed, and that patient met me at the door this evening, quite well. I think half a dozen cases like that would lead one to hesitate and consider whether in a given case it was proper to operate or to let it alone. But while able to name a number of cases in which recovery took place without operative interference, yet it will be remembered that at the last meeting I presented a post-mortem specimen from a case in which septic peritonitis had existed. I had considered the propriety of operating, but postponed it because it was evening and there was no way to warm the house, the family having just moved into it. It was afterward further postponed because of the improvement in the symptoms, but, two days later, a perityphlitic abscess and pyo-salpinx, firmly united, burst, and death ensued. Looking back on the case, one feels that it would have been better in the first instance to send out for a gas stove, warm up the room, and operate, even though it was night and a candle was all the light at hand. On the same day that this patient died I was called down-town to see another woman who had been sick three days; there was absence of the pulse at the wrist, and she died four hours afterward of the same cause. I have been called in consultation once since to a patient who looked exceedingly sick; the expression of the face was certainly very much more cadaverous than in the case of the first patient; the pulse and temperature were not so bad. There was decided inflammation in the region of the ileo-cecal valve. After a delay of three days, with treatment other than operative, she was considerably better, and recovered.

Thus it seems to me we are only just beginning the study of the proper treatment of these cases. I believe with Dr. Wylie that every day in this city there are men and women dying of peritonitis who could be cured by an operation. I have seen three autopsies the past three years on women who had died with peritonitis, every one of whom, I believe, would have been saved by an operation by an experienced abdominal surgeon.

I shall advise an operation (1) when the disease is progressing unfavorably; (2) when the patient has symptoms of obstruction of the bowels, even though the temperature and pulse are not bad; (3) when the patient has had symptoms of a pyo-salpinx, and when the peritonitis is in this locality. If needs be, we ought to give chloroform to aid us in making a more thorough diagnosis.

DR. A. P. DUDLEY.—I can only say that I believe this is a very valuable paper to bring before the Obstetrical Society, notwithstanding it treats of abscess and peritonitis in the male. Dr. Hanks' remarks are also appro-

¹ Paper could not be obtained.—Ed.

priate. It is easy enough to make the diagnosis of perityphlitic abscess in the male, but it is not so easy to differentiate the cases in women. I believe with Dr. Wylie in an early operation as opposed to undue delay. I also think there is another class of cases in which operative interference might save some lives—namely, in typhoid fever with perforation. Take a case of this disease in which shock suddenly develops, and you feel almost positive that perforation has taken place; I think that by promptly opening the abdomen life might sometimes be saved. The difficulty, however, lies in obtaining the consent of the family to an operation in cases of that kind. I should certainly feel that it was a neglect of duty on my part if I did not operate in the class of cases described by Dr. Wylie and spoken of by Dr. Hanks.

DR. BOLDT asked the author in how many cases he had seen general peritonitis due to rupture of a pyo-salpinx.

DR. WYLIE.—A great many cases of peritonitis are more or less general and not absolutely general. If you say the whole abdominal cavity, I would reply that I have seen comparatively few. I suppose most of them die before I have a chance to see them. I have operated on many cases where there was not only general but also suppurative peritonitis; that is, peritonitis of a chronic form, or rather a chronic condition. In Bellevue Hospital I have operated upon at least eight or ten such cases, but I have not reported them in this paper, since the propriety of operating in such cases has already been settled, at least among gynecologists. I have reported these cases occurring in men because I think the treatment applicable to women is also applicable to them. General surgeons, however, have said to me that it is a very different matter; that we deal with cases where there is chronic peritonitis. I do not recognize any such thing as chronic peritonitis; it is a peritonitis kept up by repetition, by renewal. If there is a peritonitis, it is acute, although there may be a chronic condition. A peritonitis caused by the bursting of an abscess in perityphlitis or perforation of the intestine, and that caused by the bursting of a Fallopian tube, I contend is the same thing, and that the treatment of the one should be very much like the treatment of the other. I sought these cases in men purposely, and have reported them simply to express my views on this subject. In one case, it will be remembered, the operation showed the presence of a perityphlitic abscess, and that the man was really in danger. Probably general peritonitis would have developed within a day or two had the case been let alone, yet at the time of the operation the pulse was normal, the bowels moved, and the patient was able to sit up. The other cases were equally instructive. I can recall the names of at least six physicians in this city who died from an abscess bursting in the abdominal cavity within the past few years. In only one was an operation attempted, and in that instance it was very different from the operation which I would perform under like circumstances.

DR. H. J. BOLDT.—I am somewhat surprised that the question to which Dr. Wylie has called our attention has not been as thoroughly studied as it should be. The subject was gone over very fully by Miculicz a number of years ago. He described some of the most desperate cases of general purulent peritonitis which he operated upon. It is true that the results were not of the brightest, yet some of the patients were saved. Besides, an operation offers the only possible chance of recovery in general purulent peritonitis, whatever may be its origin. But to separate the coils of intestine, as has been described by Dr. Wylie, sounds in words very much easier than it is in practice. In cases of general peritonitis where I have tried to wash out the abdomen, I found it extremely difficult to separate the coils of intestine, as they were glued together by lymph. Although the lymph was fresh, had been recently thrown out, yet I found it a most difficult task, or impossible, to separate the coils of intestine and cleanse between them. I think that where the abdomen is opened and washed out as thoroughly as possible, there will be no danger from those points where the intestines are agglutinated. Septic absorption will not take place there. The main point is to wash out the general cavity as thoroughly as possible,

especially down in the pelvis, for there is where the pus will accumulate. One should leave in a drainage tube only as long as is absolutely necessary, if at all. I have had cases of ruptured pyo-salpinx in which I believe the chance of recovery after washing out the abdomen would have been greater had a drainage tube been left out. Miculicz has adopted the plan of simply opening the abdomen, thoroughly washing it out with water, and then closing it again. One of his cases, which seemed to be the worst of the group, was treated in that way and made a prompt recovery. The subject is worthy of attention and general acceptance, and I am glad that Dr. Wylie has again called the attention of the profession to it. Too much stress cannot be laid upon the importance of opening the abdomen early in peritonitis, for I do not believe there is such a thing as idiopathic peritonitis. There may be; but in all the cases in which I have had opportunity to make an autopsy the cause of the peritoneal inflammation was found.

DR. WYLIE.—In reply to Dr. Boldt I would say that I break up the adhesions in order to prevent intestinal obstruction—a condition which is probably as common a cause of death as general peritonitis, and just as dangerous as septic trouble itself. It has killed patients where the temperature had hardly risen above normal. Where the adhesions become tough they usually keep up a chronic condition, causing a local peritonitis with an exudation, the process renewing from time to time.

Dr. Boldt is mistaken when he says that in general peritonitis the pus gravitates into the pelvis. Puddles of pus can be seen in the coils of intestine and mesentery throughout the abdominal cavity. In one of the cases related in the paper, there were not less than six or eight ounces of pus embedded in this manner. In one case the pelvis was the only place comparatively free from it, and in that one the intestines were not agglutinated. I would repeat that the object in breaking up the intestinal adhesions is to prevent obstruction and death from that source.

DR. BOLDT.—That I may not be misunderstood, I would say that it is true the intestines are in a form to allow the distribution of the pus throughout the entire abdominal cavity, yet the bulk of it will gravitate downward, which is toward the pelvic cavity. After washing out the abdomen, if we afterward drain at all it should be from the pelvis.

DR. W. M. POLK.—The subject is an extremely interesting one, and has been presented by Dr. Wylie very thoroughly. I did not, however, clearly understand his indications for operating where there is salpingitis.

DR. WYLIE.—Wherever there are distinct indications of pus formation, especially with signs of local peritonitis, an operation should be done at once.

DR. POLK.—As I understood one of your statements, it was that where there is a peritonitis with sharp symptoms beginning in a Fallopian tube, the proper course to pursue is to open the abdomen and take out the tube and ovary.

DR. WYLIE.—If there is any indication of the formation of pus, any extensive inflammation.

DR. POLK.—That is the very point, for the class of cases coming under that indication are very numerous, so numerous, in fact, that they constitute twenty-five if not thirty per cent of the cases of acute salpingitis which come under our notice. Now, certainly twenty-five or thirty per cent of the cases of acute salpingitis which we see do not develop general peritonitis; do not develop a condition which makes it necessary for us to expose the patient to an operation such as the reader has described. That would certainly be going beyond anything which my experience, and I think the experience of any member of the Society, would justify. I had supposed the author meant to operate when there were symptoms pointing to the development of general peritonitis.

DR. WYLIE.—I would not always wait for the development of general peritonitis.

DR. POLK.—It seems to me you would be taking a large number of cases and converting them into cases of laparotomy, which would enhance twenty-fold the danger which these patients run in the ordinary course of events.

DR. WYLIE.—Not twenty per cent. Given a hundred or two hundred cases of salpingitis to operate upon, and probably not more than one would die; whereas, if you should let them take their ordinary course, I believe fifteen per cent would die. I do not advocate operating on every woman who has signs of local inflammation or peritonitis, but if there be marked symptoms of general peritonitis or the formation of an abscess, then one should operate.

DR. POLK.—Yes, marked symptoms pointing to the development of general peritonitis. There I can agree with the doctor. You know that this Society has a duty to perform in carefully scanning and criticising the opinions expressed by its members. This is especially called for where the views expressed by one of the prominent members differ from the generally accepted views of the surgical world. Referring now to appendicitis, we know that it has occupied the attention of general and special surgeons for the last five years, both in this city and abroad, to a greater extent than any other. If you will refer to the pages of the *Medical Record* and *Philadelphia Medical News*, you will find papers by Drs. Bull and Weir, and other discussions upon the subject. It was brought up before the Surgical Society in London about a year ago, Mr. Treeve, among others, taking a prominent part in the discussion. Some years ago this gentleman called attention to the very fact which Dr. Wylie has laid stress upon this evening, that these perityphlitic abscesses are intraperitoneal for the simple reason that the vermiform appendix, which is the seat of the inflammation giving rise to them, is wholly covered by peritoneum; that if the abscess ever becomes cellular, it is only because the peritoneal surface becomes agglutinated to the parietes, and then there may be perforation to the cellular tissue below. Unless such agglutination takes place, one is sure to have an intraperitoneal abscess. This point was very clearly brought out in Mr. Treeve's anatomical work, and the whole subject has been thoroughly discussed in the Practitioners' Society, the Medical and Surgical Society, and in other societies whose proceedings have been published. Now, the general surgeons of this city do some very good work in peritonitis, and they have studied these questions most laboriously, most conscientiously, especially during the last two years, and I think there is amongst them about as much diversity of opinion as there seems to be amongst us. And it all grows out of this fact, that the condition which underlies the peritonitis is different in different cases. One fact is pretty well established with regard to the form of peritonitis of which we are now speaking, the general peritonitis of intestinal perforation—namely, that the sloughing may be so rapid that a large opening is made, general infection of the peritoneal cavity takes place quickly, and no lymph can be thrown out to encapsulate the infecting material. Those are the cases in which we do not find lymph, but rather the stinking pus with which we were for many years familiar in cases of death from peritonitis due to puerperal infection. The cell element, not the lymph element, predominated. Now, in all such cases I must confess that those of us who have operated feel dissatisfied with the result. I have had about eight cases of peritonitis from intestinal perforation, and I am free to say that my experience with those that had become general has been very unfavorable. On the contrary, where I have had cases in which the lymph was well formed into a capsule, showing recuperative action, the results were always good, for the major portion of the peritoneum was protected and did not become infected. In these one can go into the abscess, known as the perityphlitic abscess, and open it, and the patient generally does well. In some cases, as the doctor has said, there are numbers of loculi containing pus, but even in them I doubt very much whether there is general peritonitis, and in view of that fact I should hesitate in accepting his two cases as illustrative of the results of operative interference in general peritonitis from appendicitis. In cases of general peritonitis in which the septic element largely prevails, all have been amazed at the final result when considering the slight general disturbance which had been present. My last case was in as fine a specimen of a boy as I ever saw, and he came under my observation on the third day. As he lay in bed, with scarcely any tympanites,

he looked as if he would live to be as old as Methuselah. I opened his abdomen and found it literally saturated with feces and pus. The shock of the operation killed him in three hours. That is the history in nearly all similar cases. I think the experience of Dr. McBurney, Dr. Bull, Dr. Sands, and of other gentlemen who have operated in these cases, will bear up substantially what I say. While we operate in obedience to the general law which seems about established in such cases, yet the results have not been such as to make us feel that we have accomplished much good. But where there is perityphlitis, a localized peritonitis, undoubtedly the rule should prevail to operate, and operate early. Here, I believe, we will accomplish a great deal of good. In encapsulated cases the difficulty remains local until the bursting of the abscess and escape of its contents into the general peritoneal cavity. That, of course, is the great danger in these cases.

Regarding the point which Dr. Hanks made, that a great many patients get well, there is a gentleman in this room who was once on the verge of the use of the knife for the condition under discussion. He can probably speak more feelingly on this subject than any other gentleman present. We are, as has been said, stared in the face by the fact that many of these patients get well without operative treatment, and by the further fact that if you use the knife you introduce a new danger. That brings us to the question of the danger of exploratory incision, and whether we are justified in undertaking it in all cases of localized tenderness in the abdomen of a kind to make us suspect the presence of peritonitis. I confess that I am not prepared to say to-night upon which side I stand. My inclination, however, is toward making an early exploratory incision. If made, probably it will do no harm. If infection is present, you will have the most efficient means of removing it while it is but local. At present no one can say, at the outset of a case of appendicitis, whether it will subside, whether it will become encapsulated, or whether it will promptly pass into general peritonitis. In view of this uncertainty, there are three questions to be answered at the bedside: Is the case one to recover short of abscess or general peritonitis? Is it one that will demand operation for abscess or general peritonitis? The value and the danger of an early exploratory incision. To wait for general peritonitis is to wait too long.

DR. G. M. TUTTLE.—I have gleaned from the discussion, and from the part of the paper which I heard, that the subject is, when to operate and when not. Whether to operate in spite of familiar rules, in spite of theoretical predilections, I have found a very difficult thing to determine at the bedside. I should like to state about the average case in which I find my difficulty. It is not one in which there is acute general peritonitis. There I distinctly prefer to operate in all cases. But the cases which puzzle me most are those in which I can feel from the navel down to the pubes a hard, solid, resisting mass. The case is a fairly acute one, and yet might be classed among the chronic, perhaps running a week, two weeks, or three weeks, with high fever, the evidence of firm agglutination substantiated by physical examination both above the abdomen and through the vagina. I have followed both inclinations in the treatment of these cases. I operated in one instance three days ago. The patient's health was plainly declining, with exactly the symptoms which I have just pictured. I opened the belly, and found everything in such hopeless confusion that I let it alone after closing the line of incision. I let it alone because I had before under similar circumstances gone ahead. I have repeatedly, on opening the abdomen and freeing the omentum from its attachments to the abdominal walls and coils of intestine, found two, three, possibly a dozen large loculi of pus distributed in different directions; the coils of intestines firmly agglutinated so that any attempt to brush them apart would result in tearing the serous coat and leaving a red, raw surface. These cases, it seems to me, present the greatest difficulties. In one or two I have gone ahead. In one, apparently a most hopeless case, in which the whole abdomen presented the condition mentioned, together with a ruptured pyo-salpinx, the patient recovered without the slightest difficulty. In other cases I have started and my courage gave out. If I felt that there was the slightest chance of success, I

would be perfectly willing to continue under such circumstances, but the mechanical, the practical difficulties have been too great to warrant it; in fact, it could but result in tearing everything to pieces. In one or two cases like that in which I abandoned the operation, I found after three or four weeks that the pelvic contents had softened, the organs were free, absorption had taken place, and I congratulated myself that I had not gone further. In some cases where lymph could have been taken out by the handful, looking like the white of an egg, there was subsequently complete absorption within a comparatively short period. Those are the cases in which I have yet to find rules formulated which will be a safe guide for action in any and all cases. While I am inclined to make an exploratory incision, yet I have found such a condition as would lead me to think it might be well to wait until some absorption takes place which will better enable one to get at the parts. In one instance in which I began the operation and found it impracticable to proceed, a month afterward the cavity cleared up, I found a pyosalpinx, and removed it without difficulty.

DR. POLK.—To make myself clearly understood, I would add that of course I agree with Dr Wylie regarding the propriety of making a free incision in general peritonitis.

DR. MALCOLM McLEAN.—I would like to be informed of the exact meaning of the formula laid down by Dr. Wylie, that we should be guided by the marked indications of the formation of pus. I think that is an exceedingly important turning point. We have many cases of peritonitis answering the description which Dr. Tuttle has given. In some the indications are not so well marked, but from the vaginal side, at least, one can find evidence of exudation and of peritonitis across the lower abdomen, and can feel fairly sure of its reaching higher and involving the intestines. Those cases occur so frequently, and so frequently get well without an operation, that it becomes an important question in my mind what shall be regarded as the guide to the operation. Or are we to understand that it is likely such a case would end in general peritonitis, and that we are justified in heading it off by an operation? If that is the proposition of the reader of the paper, I beg to differ. I would prefer to wait. The definite guides which Dr. Wylie has given for operative interference in perityphlitic abscess I think are exceedingly valuable, and his mode of attacking the case from the two sides is an important step in advance of the usual practice with which I am familiar. My own experience in perityphlitic abscess has been limited to three cases, and in those I found the condition which the author has described, saculation having taken place and simple evacuation of the abscess, resulting in recovery.

DR. WYLIE.—It would be difficult to fully review all the points which have been raised in the discussion. First, however, let me say that the cases which I have reported were cases of general peritonitis. One was as perfect an example as could be wished. An abscess had burst a few hours before, an exudation containing lymph had taken place, and there were puddles of offensive pus in the peritoneal cavity.

I do not claim that all cases of general peritonitis, where a large amount of pus has been thrown into the peritoneal cavity, will be saved by operative interference. Certainly a number will die, but they would die anyway, even though they were not operated upon. What I wish to make clear is, that it will not do to follow the practice of many surgeons—simply to open down upon a burst abscess in the belly and drain that spot, neglecting to break up adhesions elsewhere or to get out other tumors. That is the important point of difference between me and the general surgeons, as was shown in the discussion of Dr. Jacobus' paper by some of the best surgeons of this city. They claimed that the treatment which I have described was impracticable, while I claimed that it could be carried out successfully, and proved it by two clearly illustrative cases. Dr. Polk was mistaken when, during the course of his remarks, he said I did not see the peritoneum. I did see it plainly, having made an opening probably not less than five inches in length. Besides, a counter-opening was made, which further aided one's view of the peritoneum. In one case—Dr.

Jacobus'—nearly every part of the peritoneum was covered by fresh lymph or broken-down lymph and pus and sero-purulent matter. I believe both patients would have died without an operation. The other cases were related to show that there may be as much as a pint of stinking pus in the abdomen, with hardly any subjective symptoms. I do not claim that every woman who has so-called cellulitis or local peritonitis must be operated upon. But if there is distinct and continued local tenderness, with signs of an abscess which is liable to burst, we should operate. Regarding the cases mentioned by Dr. Tuttle, it has been my practice in Bellevue Hospital and outside to operate only where there are indications of pus, especially where one can make out a pus sac or an enlarged tube. In not one case out of about three hundred have I had occasion to close the abdomen and leave the diseased tube and ovary. The only case in which I have had occasion to regret my course occurred about three weeks ago, where on cutting down I found a malignant, gangrenous mass involving the whole broad ligament, affording no opportunity to tie and check hemorrhage. That patient died, but I think she would have died had she not been operated upon, for there was more or less general peritonitis with intense local peritonitis. My results have shown about one death in a hundred cases, and the patients who were lost would not have been saved by non-interference. To say that this case and that one get well without an operation is no argument at all. In fact, we are now going over the question of general peritonitis as we did over that of local peritonitis or salpingitis seven or eight years ago. I know, as Dr. Polk has said, that this question has been more or less under discussion for some time, but the trouble is, the people do not believe. Even two-thirds of the surgeons in this city do not believe the treatment which I have indicated is practical. I am satisfied that if a number of our surgeons had seen the cases described in my paper, probably not one in six would have advised an operation. Yet, as the result proved, those are just the cases in which operative interference is most demanded. I believe that a surgeon who has operated on forty or a hundred cases of local peritonitis due to salpingitis, where he has had to deal with pus in the peritoneum, is a better judge of this subject than the general surgeon who operates only exceptionally in abdominal cases.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF CINCINNATI.

Meetings of June 6th and 13th, 1889.

GEO. E. JONES, M.D., *President, in the Chair.*

EXTRA-UTERINE PREGNANCY

had been made the subject for special discussion at these meetings.

DR. GUSTAV ZINKE read a paper on

THE CAUSES AND VARIETIES OF EXTRA-UTERINE PREGNANCY.¹

DR. W. H. WENNING, to whom had been assigned the discussion of the differential diagnosis, said that, by a strange mockery of fate, he had lately met with a case of mistaken diagnosis, the report of which would perhaps impress the points of diagnosis more forcibly than the simple recital of the symptoms.²

¹ See original article, page 128.

² See original article, page 155.

DR. HENRY ILLOWAY made the following *résumé* of the

SYMPTOMATOLOGY.

The symptomatology of extra-uterine pregnancy may be divided into two distinct divisions:

- (a) The symptomatology from the outset to the period of labor.
- (b) The symptomatology after that period.

The first division is undoubtedly of the greatest importance, as upon the proper appreciation of the symptoms will depend the application of important therapeutic measures, and a misapprehension of them, and therefore failure to recognize the true state, may lead to disastrous results to the mother.

The second division is of but secondary importance, both as regards diagnosis and the selection of therapeutic measures; for even though an operative procedure should be resorted to under a mistaken idea as to the true condition present, such a procedure in the present state of abdominal surgery would be perfectly proper and could only have a beneficial result. For this reason, and, furthermore, because the previous history of the case with its peculiar characteristics will furnish all the aid necessary for diagnosis, the symptomatology of the second period of extra-uterine pregnancy, or the second division, will be omitted from consideration here.

At the outset the woman has the consciousness of being pregnant, and as the pregnancy advances the symptoms common to this condition become more marked.

What these symptoms are need not be related to you, who are so familiar with this state.

In a short time, however, from four to ten weeks after the woman has become aware of her pregnant state, other and significant symptoms make their appearance.

I. The earliest of these symptoms is a pain in the hypogastrium, which is described by her as colicky. This pain is usually of great violence, preventing the woman from standing erect or lying stretched out—a pain that doubles her up. The skin becomes pale and cool, and is covered with a clammy perspiration. The pulse is small and thready. There may be vomiting. The suffering may be so great as to produce syncope.

This pain, paroxysmal in character, may last for a few hours or a day, then gradually disappears, and with its disappearance the patient appears restored to health. She continues thus for a longer or shorter time, when another paroxysm occurs, and the patient again seems on the brink of the grave.

These pains rarely set in earlier than the first month after conception, and sometimes not until the fourth or fifth. If the gestation continue on undisturbed, the pains may disappear after the fifth or sixth month. They may, however, recur again about the end of pregnancy—*i.e.*, about the beginning of the ninth month.

II. Besides the paroxysmal pains above described, there may be a fixed grinding pain in one of the iliac fossæ, with propagation of the same down the thigh.

Both of these varieties of pain are more common and more severe in the tubal than in the ventral forms of extra-uterine pregnancy.

III. *Vaginal Hemorrhage*.—This may vary in character from dark-colored, coagulated blood to a light-colored and watery discharge. Though not always present in abnormal pregnancy, according to Parry, still in the majority of cases that have been carefully observed and fully reported this phenomenon forms part of the history. Out of the eleven cases reported by Garrigues in the Transactions of the American Gynecological Association, 1882, it is noted in ten. In other cases, singly reported, it is also noted. Gaillard Thomas, in a paper on this subject (*loc. cit.*), in the summary of symptoms on which his diagnosis in the cases reported was based, notes this as one of them.

The vaginal discharge may have a menstrual character—that is, appearing at intervals—or it may be continuous. Or we may have symptoms of abortion—what the patient supposes to be such: profuse hemorrhage with discharge of deciduous membrane, the activity of the uterus apparently continuing.

IV. *Abdominal Enlargement to one Side*.—This, however, is more common in the tubal varieties than in ventral pregnancies. In the latter the abdomen usually presents a symmetrical enlargement as in ordinary pregnancy.

Though the symptoms above detailed may lead us to suspect an abnormal pregnancy, certainty on this point can only be obtained by a careful vaginal exploration and the recognition of the following points:

V. A deviation of the uterus from its normal position, and this deviation produced by a tumor located on either side, in front, or behind.

It has been claimed that this tumor may be recognized as early as the end of the first month; it is the general consensus, however, that this is an exceedingly difficult matter at so early a period.

VI. *Ballottement*.—The tumor being recognized, a careful examination of the same will show that it is an elastic and fluctuating mass, and ballottement will reveal the presence of a solid body floating therein.

VII. *Vacuity of the Uterus*.—Examination of the uterus with the sound, and finding it empty.

These are, in brief, the main symptoms of extra-uterine pregnancy, and a correct appreciation of them, or of a majority of them, will enable us to recognize the true status.

DR. THOS. P. WHITE made the following remarks on

THE PALLIATIVE AND ELECTRICAL TREATMENT OF EXTRA UTERINE PREGNANCY.

The palliative treatment of extra-uterine pregnancy, properly speaking, consists in affording all possible relief to the urgent symptoms, leaving to nature the termination of the pregnancy, causing either the death of the fetus from pressure, or rupture of the sac and consequent absorption.

The most harassing symptom is pain; sometimes it is excruciating, sometimes is nearly absent, and is combated in the usual way: external applications, hot douches, opium in suppositories or hypodermatically. Morphia has also been directly injected into the sac, for the double purpose of relieving pain and of causing the death of the fetus; this, however, has proved a dangerous proceeding.

Likewise tapping the cyst has been resorted to for the relief of tension in the sac, and in hopes it might arrest the development.

In cases left to nature and palliative treatment, it has long been noticed that where death of the fetus occurs early, even where there was tubal rupture and formation of hematocele, a very large number of cases recovered, and statistics show a death rate of less than fifty per cent of the total number of cases thus managed.

The younger the fetus the more hopes there are of complete absorption and certain recovery of the patient; thus, in view of aiding nature in the first part of the treatment, that of producing the death of the fetus, electricity has been resorted to.

Bachetti, in Italy, first used faradic puncture for this purpose; his efforts were crowned with success, the tumor having been reduced to the size of a pigeon's egg in three months.

Since then both the faradic and galvanic currents have been successfully used, principally here in America.

Unfortunately in this period of progress there is widely spread the craze for operating and a steady tendency in one direction. When there is doubt in diagnosis, operate and find out; in consequence, especially in the Old World, all attention is directed to the operative procedure, and what attention electricity does receive is to prove theoretically that it is incapable of causing the death of the fetus or of arresting the growth of the placenta.

Experiments, however, have forced its opponents to recognize and admit the fact; even Lawson Tait, who at first stigmatized its use as nonsensical, has been forced to admit the possibility, and bases his opposition on the fact that it sometimes fails to arrest the growth of the placenta, and that the dangerous element after the death of the fetus is not the fetus itself, but the placenta, and that a secondary operation is sometimes necessary for removing these remains.

There is hardly any doubt but that an early fetus with its appendages can be so entirely absorbed as to leave only the smallest trace behind.

Dr. Leopold has thrown considerable light on this subject by his experiments, and has conclusively shown that complete absorption does take place, or that calcification or mummification ensues, and as such can be retained without harm.

Dr. Petch reported a case in which he heard the fetal heart. The fetus died in the fifth month, and almost complete absorption occurred.

Gallard thought that most hematoceles were due to extra-uterine gestation; Lesomf, Leopold, and Schroeder likewise are of the opinion that it is often a cause, and Veit goes further and says it is the commonest cause of tubal disease. Authorities generally admit that tubal pregnancy occurs much oftener than is usually supposed; recovery and complete absorption are the rule and not the exception.

Mr. Lawson Tait in his first twenty operations failed four times to find the fetus; other operators likewise report such cases. This happens so often that it certainly cannot be attributed to negligence of the operator, but to absorption.

In my opinion abdominal section and electricity should not be put in direct opposition to each other, nor am I an advocate of the electrical treatment in the sense that it should always be used; but I believe each should be accorded its own sphere and used in its proper place. When rupture has occurred, or there is violent hemorrhage, abdominal section is cer-

tainly indicated. Only four out of Lawson Tait's cases were in danger of hemorrhage; possibly in the others absorption could have taken place, but it is certain that a disease has been removed which could have produced renewed attacks.

Dr. Brothers, of New York (*AMERICAN JOURNAL OF OBSTETRICS*, 1888, page 480), collected forty-three cases operated on with electricity—two fatal, and only two in which electricity failed to produce death of fetus.

It is a well-known fact that certain diagnosis in the first months is next to impossible, although a tumor can be felt at the side of the uterus. That we should now make an exploratory incision for diagnostic purposes, or should wait for further developments and rupture of the sac, seems to me entirely unreasonable, when we have at our command a means so easy of application and so certain in producing destruction of the fetus.

Electricity has another advantage to the average physician: any one with intelligence and the apparatus can make the application. Be it tumor or fetus, the danger of the application is exceedingly small. And many object to performing capital operations; many women object very seriously to such an operation until the danger to life is made very apparent; moreover, successful operators in this broad country are not always at hand.

Either current can be used to produce death of fetus, but I believe the action is entirely different. The faradic seems to produce death by interfering with the placental circulation; the action is gradual and requires a large number of applications. It is likewise more certain in stopping the growth of the placenta, on account of this action, than is galvanism, which seems to cause death by a direct action on the fetus itself, the placenta becoming detached on account of the arrest in fetal circulation. For this reason a combined treatment—that is, application of both currents, the faradic as strong as can be borne, and the galvanic one hundred and fifty milliamperes—is advisable.

The application is best made with the negative in the vagina, pressed well up against the tumor, or even with the negative in the uterus.

When death of the fetus can be ascertained, or the tumor diminishes in size, the faradic should be laid aside and only a mild—thirty to forty milliamperes—galvanic current be used in order to produce a more rapid and more complete absorption.

DR. RUFUS B. HALL, in discussing

THE OPERATIVE TREATMENT OF EXTRA-UTERINE PREGNANCY.

said: When asked to take part in this discussion, the treatment of extra-uterine pregnancy by abdominal section was assigned me. The part is in perfect accord with my early teaching; and my subsequent study of the subject has not induced me to depreciate the value of surgery, but, on the contrary, it has caused me to have a higher appreciation than I before held of the possibilities of surgical treatment in these cases. Here we have a condition calling for the treatment of a foreign body within the abdomen, and, when the sac has ruptured, for the treatment of hemorrhage within the abdominal cavity. I feel that every surgeon should have a due appreciation of the responsibility resting upon him, and be prepared to do the necessary operation at any time that his services should be required for

the treatment of this unfortunate condition. He should be prepared to master the many complications that so frequently arise in abdominal and pelvic surgery ; for it is the ready and quick perception of the best manner of overcoming unlooked-for difficulties in these operations that weighs so much for or against the patient's chances of recovery. For all practical purposes it would be safe to accept the teaching of Lawson Tait upon this subject. The important points are these : First, that all cases of ectopic pregnancy are in the beginning tubal. Second, when rupture occurs the ovum may pass into the peritoneal cavity or into the intraligamentous cellular space. In the first instance the ovum perishes, the second favoring the growth and development of the fetus. The surgeon will rarely be called upon to operate before rupture of the sac has occurred, as many of these cases do not give rise to any symptoms other than normal pregnancy before rupture.

The rational consideration of the details of the operation necessitates the description of three separate procedures, as may be necessitated by the time at which the operation is made. These may be divided in the following manner : Operation before the fourth month ; operation between the fourth month and term ; operation after term and in spurious labor.

First, operation before the fourth month. The incision should be made in the median line, as in the ordinary abdominal section, and should not be more than three inches in length ; this will give us ample room for the introduction of two fingers, and their easy manipulation when introduced into the pelvis. Through this short incision we are easily able to seize the tube, bring it up to or through the incision, ligate and remove it as well as any blood clots that may be present. We also incur less risk of exposing the abdominal viscera, and of being impeded in our manipulations by the escape of intestine and omentum. If we should find that the original incision is too short, it is an easy matter to enlarge it to any length required. If we find the tube or sac ruptured, it is important to deliver it and tie it off as speedily as possible ; we then have the source of hemorrhage completely under control, when we can proceed with the operation at our leisure. In dealing with an adherent mass, we should bear in mind the anatomical relations of the important structures in the pelvis. In this, as in all abdominal operations where there has been hemorrhage, where there has been escape of the contents of a cyst into the abdomen, and where there have been many adhesions separated, the cavity should be well irrigated. Irrigation not only removes all foreign matter, but acts as a stimulant as well, as I have frequently verified. One of the most important points in the operation is thorough drainage. We should drain in all cases where there has been hemorrhage into the abdominal cavity before the section, or where there was much bleeding during the operation. When there has been escape of septic matter from any source into the peritoneal cavity, we should have no hesitation about leaving in a drainage tube. In my own work I drain in all such cases, and in all doubtful cases as well ; and I find that the cases where drainage is employed recover as easily as the cases where it is not considered necessary.

Second, operation between the fourth month and term. If a case of ectopic pregnancy goes safely beyond the fourth month, the general tendency of operators is to leave the case alone until the term of gestation is about

completed, or the onset of spurious labor if the fetus be living. Then comes a point of great importance: Shall we try to remove a living child, or shall we await the death of the child and the approach of sepsis before operating? Upon this point there is a difference of opinion. There are a few operators who believe that we should depart from the old mode of awaiting the death of the child, and operate at or about the onset of spurious labor, thus saving the life of the child as well as that of the mother. The first method has had a high mortality, as regards the fate of the mother, in the past. Harris has collected twenty-five cases operated upon, with twenty-three deaths. But the same author has collected ten cases occurring since 1881 in which the operation was performed after the fetus became viable, with four recoveries and six deaths. Five of the ten children lived, or their death was attributable to natural causes. If the operation is made when the term of gestation is about completed, or at the onset of labor, we are offered the choice of two procedures: (a) that of making the incision in the median line, which, in my opinion, should never be chosen; (b) that of making the incision well to one side of the median line.

(a) When the incision is made in the median line, the operation is to be made entirely according to the rules of ovariectomy. The great danger of the operation while the child is alive lies in the relations of the placenta and the placental circulation. If the placenta is attached to the anterior wall of the sac—and it is almost if not quite impossible to ascertain that until we have made the incision—and the sac is incised through the attachment of the placenta, a very serious hemorrhage will inevitably occur. We must either avoid this hemorrhage or control it; we might puncture the sac in another place, enlarge the opening, and extract the child. Then comes the question: How are we to deal with the placenta? This is the great problem in these cases. Some months ago Tait spoke of a possible mode of disposing of the placenta by emptying it “of blood and closing the wound hermetically upon it, then closing the abdomen and leaving the placenta to become absorbed.” Quite recently Dr. Champneys, of St. George’s Hospital, London, has tried “injecting antiseptic substances into the placenta, then closing the wound on antiseptic principles.” In his case the result was unsatisfactory. The placenta became gangrenous, suppurated, and finally caused the patient’s death. It seems to be the generally accepted plan to stitch the sac to the edges of the incision and leave the placenta untouched; place a drainage tube of large size in the sac, so as to provide for perfect drainage until the placenta is thrown off. Although Tait has saved five mothers out of six operated upon in this manner, he considers it “absolutely unsurgical” and no longer recommends it. He now suggests the rapid separation of the placenta and “vigorously rubbing the bleeding surface with perchloride of iron,” and reports a successful case treated in this manner. Although the results following the plan of leaving the placenta untouched have been fairly good—better, perhaps, than by any other method—the risks from septic infection and hemorrhage are very great. It is to be devoutly hoped that the plan so recently suggested by Tait will stand the test of experience. As regards the other methods, Billroth, Thornton, Schroeder, and Litzmann have successfully removed the entire gestation sac, after the death of the child and after the placental circulation had ceased; and many of the prominent surgeons of the day regard the removal of the entire gestation sac, with the *living*

child, as a not entirely unfeasible operation. Martin has also had a successful case when he removed the placenta. It has been suggested by others to stitch around the placenta with the cobbler's stitch. Others have attempted to tie the vessels feeding the placenta. In all cases where it is possible to do so, there can be no doubt but that the best method is to extirpate the entire gestation sac. No rule can be laid down for the management of these cases, and the operator must be governed by the condition met with in each individual case.

(b) That of making the incision well to one side of the median line. It has long been a well-known fact that those cases in which the gestation sac can be opened without opening the peritoneal cavity are the most favorable for operation—that is, regarding the fate of the mother. This fact suggests the lateral incision for the purpose of reaching the sac without opening the peritoneal cavity. This plan has been recommended by Tait, who gives as his reason for so doing that he believes “all the full term ectopic pregnancies are those which have grown in the broad ligament, extraperitoneally. As they grow they separate the folds of the broad ligament, and finally lift the peritoneum slowly out of Douglas' pouch, off the rectum, sides and brim of the pelvis, off the posterior surface of the uterus, and off the back and sides of the lower abdominal walls as far around as a point corresponding to the cornu of the uterus on each side. The result of this is that the posterior and lateral levels of the reflexions of the peritoneum are raised very materially when the utero-vesical pouch is interfered with, and it remains as a long process, like the finger of a huge glove, running down in front of the gestation sac to its normal ending on the base of the bladder.” If we accept this as correct, then we have anatomical reasons for the lateral incision. For it is evident that the median incision would at once open the peritoneal cavity—the very thing that is to be avoided when it is possible to do so; while the lateral incision would favor the opening of the gestation sac without opening the peritoneal cavity.

In those cases where the pelvis is well filled with the tumor, where the fetus has pressed downward the posterior vaginal septum until it has become so thin that the finger might be passed through it—in short, the cases that were formerly considered favorable for extirpation through the vagina—it has occurred to me that, to more certainly avoid the risk of opening the peritoneal cavity, the incision should be made just above and parallel to Poupart's ligament, the outer end to be extended somewhat upward as the occasion demanded. With this incision, even though the peritoneum had not been lifted up by the growth of the fetus, it would not be a difficult matter to raise the peritoneum and extract the child without opening the peritoneal cavity. It would probably, then, be the best plan to leave the sac undisturbed, tying the cord near the placenta, and treat the cavity as an abscess, close the upper part of the wound, and provide for thorough drainage.

Third, operation after term and spurious labor. In those cases where it is considered best to operate after the *death* of the fetus—where nature does not succeed in encapsulating the fetus—most operators agree that the operation should be postponed until we are certain that the placental circulation has stopped. If the operator selects the median line for the incision, it may be an easy or a difficult operation, owing to the conditions found and

how he decides to treat them. If he attempts to extirpate the entire gestation sac, he may find it impossible to do so because of the extensive and firm adhesions which not infrequently exist at this late date. If he finds it impossible to remove the sac, he must empty it, stitch the opening to the edge of the wound, and provide for thorough drainage. When operating at this late date, should the case prove to be one of abdominal pregnancy, and the child be found loose in the abdominal cavity, without a sac, as in the case recently reported by Dr. McMurtry, it occurs to me that constant irrigation of the abdominal cavity for several days would be advisable, after which it might be washed out through the tube, as the symptoms indicated. If the lateral or oblique incision is chosen and the sac opened without opening the peritoneal cavity, the operation would probably consist in opening the sac, emptying it, and providing for drainage.

DR. C. D. PALMER made the following *résumé* of the whole subject of

THE DIAGNOSIS AND TREATMENT OF EXTRA-UTERINE PREGNANCY.

Of the different questions now specially concerning the obstetric and gynecological world—Cesarean section, its special field of utility and its best method of operation; the Apostoli method of treatment of uterine fibroids; vaginal hysterectomy for cancer of the uterus, its special field and the best technique of operative procedure; and, finally, that of extra-uterine gestation—no one of these questions ought to concern us more than the last-named. Of the various branches of this subject, our interest practically centres in the diagnosis and treatment.

As to the varieties, it may be said that a fecundated ovum may develop in any of the internal genital organs. It may engraft itself on any of the abdominal organs and undergo developmental changes. Of the many varieties, most of them are not fanciful but real. But, for the sake of convenience, we may condense these into four: the interstitial, the tubal, the ovarian, and the abdominal.

Diagnosis.—In no abnormal or diseased condition of the body is an accurate diagnosis more important. In no disease is the trite old saying, "To be forewarned is to be forearmed," better exemplified. Can we always be forewarned? No. Whether we are will depend, in part at least, upon the patient's intelligence to give us a truthful and full account of her recent medical history. Unfortunately some of our patients unintentionally mislead us. A condition of extra-uterine pregnancy may occur, contrary to the rule, in a woman who has had several children, and who, after the usual lapse of time, realizes she is again pregnant in the ordinary way, but who, without any apparent cause and without any warning, is suddenly seized with an agonizing pelvic pain and uterine hemorrhage followed by a degree of prostration and collapse, so that within a few hours the patient, as if by a deluge, is brought to the very threshold of life—the fetal sac has suddenly ruptured.

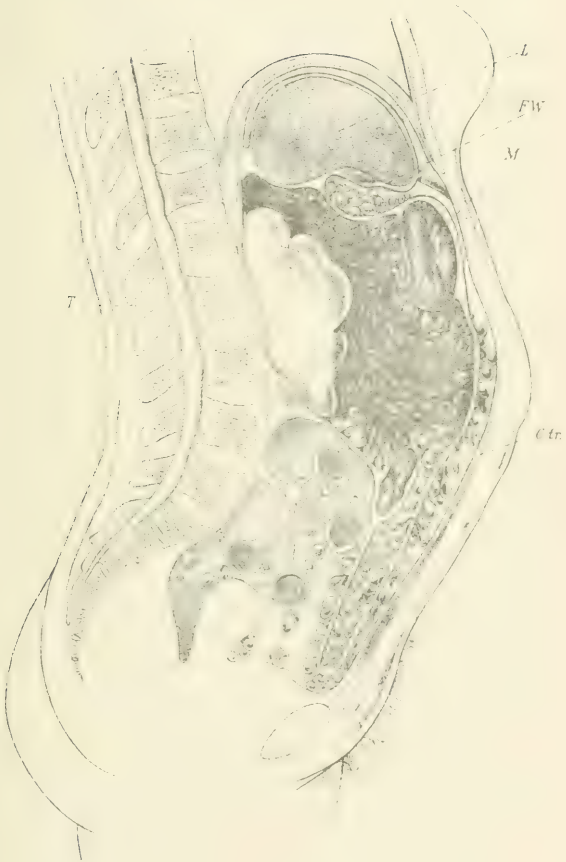
These cases, however, are comparatively rare. In the vast majority of cases, certain almost characteristic symptoms render us strongly suspicious of the actual state of affairs. These are a sanguineous uterine discharge, accompanied by iliac pains extending down the thighs, at times paroxysmal, a discharge of pieces of decidua without a fetus, etc. Their presence neces-

sitates the summoning of a physician, who, if conversant in such matters, makes a digital and bimanual examination, when the diagnosis will be probably settled. This irregular sanguineous discharge and pelvic uneasiness usually precede actual rupture of the vicarious fetal sac, which latter occurrence seldom fails to present itself with its pathognomonic symptoms, in all but the abdominal varieties, from the fourth to the fourteenth week of gestation. The evidence of ectopic gestation is at first made simply *presumptive* by the above symptoms; subsequently it is made *probable* by the detection of the extra-uterine fetal sac, very rarely anterior, but usually lateral or posterior to the uterus itself. The uterus, although enlarged, with a cervix somewhat softened and a lower cervical canal somewhat patulous, does not show these usual physiological structural changes to a degree commensurate with the duration of a normal pregnancy. The size of the extra-uterine sac is at first small, smaller than the smallest sized orange (say the size of a nut), but is progressive in its development, and at the fourth month of gestation is as large as two fists. The uterus is not spherical but flattened, and instead of sinking into the pelvic cavity, as it ordinarily does in the first and second months of utero-gestation, tends to rise to the right or left, or is just behind the symphysis pubis.

Summoned to a case after the occurrence of the aforesaid symptoms, we naturally pursue our investigations to satisfy ourselves first as to the probable existence of pregnancy, and especially whether this pregnancy is intra- or extra-uterine. The age, the social condition, her former history of fertility or sterility, her recent menstrual history, mammary changes, stomach disturbances, will throw much light on this question. If there is now a reasonable assurance of the existence of pregnancy, is the uterus empty excepting any decidua, and is the sac situated laterally or posteriorly to the uterus a vicarious uterus holding the growing ovum? Careful digital and bimanual exploration, per vaginam and per rectum, patient under an anæsthetic if need be, will usually reveal positive conclusions. Arterial pulsations in the vaginal walls below the extra-uterine sac are peculiar, and the violet color of the vagina is more pronounced, in ectopic gestation.

The use of the sound is of course clearly contra-indicated if there is the least suspicion of the pregnancy being intra-uterine; and, fortunately, its use can be dispensed with if the aforesaid methods with anæsthesia are thoroughly employed. We should be ever mindful that intra- and extra-uterine pregnancy may coexist. Positive conclusions are arrived at by observing, by touch, the developing extra-uterine sac—left lateral more often than right—by hearing the placental murmur and the fetal heart sound, and by detecting the *fetal size, shape, and movements* therein, while, at the same time, no *increasing size* in the uterine body or neck can be observed. It is questionable whether it is prudent for us to commit ourselves in diagnosis to our patients, or to rest content in mind as to the method of treatment until positive conclusions are reasonably assured. A lateral or a post-uterine sac may be simulated by, or be an abscess of, the broad ligament, a pelvic hæmatocele, a retroverted or retroflexed gravid uterus, an ovarian or parovarian cyst, a dermoid cyst, a hydro- or pyo-salpinx, or an extra-uterine subperitoneal fibro-cyst. The differentiation between any of these it is needless to speak of at this time.

When the uterus, in normal pregnancy, after the third month ascends



MYXO-SARCOMA OF PERITONEUM.

(FRANKEL AND KAUFMANN.)

above the pelvic brim, normal intermittent uterine contractions, as described by Braxton Hicks, may be felt. These, occurring every few minutes, may be regarded as sure proof of intra-uterine pregnancy, for they are detected in no other variety of abdominal enlargement, and are not abated if the fetus is dead. They are of course, then, absent in ectopic gestation. Their presence is a sure proof of normal uterine pregnancy, but a failure to detect the same must not be regarded as a positive proof of the absence of intra-uterine fetation. Possibly the uterine sound may be employed if these contractions are not felt by palpation in competent hands.

The extra-uterine sac of ectopic gestation is not as soft and elastic as is the pregnant uterus, but it is harder, more resisting (though its walls are thin), and quite tender to touch. The presence of this tumor at the side of the uterus is revealed after the first five or six weeks. It is ovoid in shape, fluctuating, and in the absence of peritoneal adhesions can be examined by ballottement. At the end of the fourth month ballottement of the fetus can be detected.

We believe it is a common observation that most cases of extra-uterine pregnancy are preceded by a history of an absolute or relative sterility. The length of a sound introduced into the uterus is by no means a reliable sign for or against the diagnosis of extra-uterine pregnancy.

The gravest doubts must exist in cases of ectopic gestation of the interstitial variety, and those forms of the disorder taking place in rudimentary uterine cornua.

If after sac rupture—usually early if it is tubal, later or not at all if this sac is abdominal—the patient survives, the effused blood may form a tumor larger than the fetal sac itself. Here lies one difficulty. Still another will occasionally be encountered in the differentiation between normal intra-uterine pregnancy on the one hand, when there is some extra-uterine pelvic neoplasm, and extra-uterine pregnancy on the other hand, with its ordinary sympathetic enlargement of the uterus.

The vast majority of cases will, for reasons apparent, not be seen until the manifestation of certain symptoms referred to; but occasionally, as once happened with me, the patient will be under treatment for a chronic uterine affection at the time this kind of pregnancy occurs. Again, she may be seen medically, and, on account of certain symptoms pertaining to the pelvic organs, be appropriately examined. Opportunity in either case is thus afforded to make a diagnosis quite early. The symptoms manifested in different individual instances vary somewhat, of course, as differ women; yes, even the same woman in different pregnancies is by no means alike.

The differential diagnosis of extra-uterine pregnancy in the early months all must admit is very difficult. Many mistakes are made, as post-mortem examinations of the pelvic and abdominal organs conclusively prove.

Lawson Tait makes the sweeping statement, probably an exaggeration, that an early diagnosis is impossible. The present weight of opinion, however, in this country at least, is that tubal pregnancy can be diagnosticated early. If the diagnosis is difficult, how much more apparent must it be that any diagnosis of the *variety* is difficult until a full clinical history is clearly obtainable!

Treatment.—Experience with this disease abundantly proves that early de-

tection enables us to avert the coming storm and a probable fatal issue. The use of ergot, the salines, a restricted and meagre diet, are worse than useless. Puncture of the sac per vaginam or through the abdominal walls, and the injection of lethal remedies, are now abandoned. When the diagnosis is reasonably assured, *prior* to any sac rupture, the employment of electricity, at first with the faradic, then the galvanic current, plain or interrupted, without puncture, is all we need almost invariably to kill the fetus. Experience and experiment, by placing within the peritoneal cavity of non-pregnant rabbits embryonic rabbits at different periods of development, prove that Nature possesses the power of absorbing an extra-uterine fetus and its envelopes up to the age of fourth month; beyond this time it is probably asking too much of Nature. Should a mistake in diagnosis be made, and almost any kind of pelvic neoplasm be diagnosticated instead of extra-uterine pregnancy, the use of either the faradic or galvanic current may do good but no harm. No ectopic sac rupture ever occurred from it. If the use of electricity possibly fails, rupture of the sac is almost always threatened in time, on account of the increasing distention from a developing fetus; and rather than wait longer, laparotomy, now a simple procedure, should be made. To me it seems a clear indication to give the preference to laparotomy, for many if not most cases of ectopic gestation, after the manifestation of symptoms of threatened or actual sac rupture. One-half of the whole mortality is from rupture.

A patient almost collapsed or moribund from the intense pain and intra-peritoneal hemorrhage I would not care to subject to the additional shock of a laparotomy with sac extirpation.

J. Greig Smith well quotes Lusk, viz: "The resources of surgery are rarely successful when practised on the dying." Called in such instances, as we are almost always, in great haste, neither patient, friends, nor attendant are prepared for immediate action. But the attendant may make preparations, and if the patient rallies and the friends consent, and especially if a continual hemorrhage, a peritonitis, or septicemia supervenes, the operation should be undertaken at the earliest time practicable. The entire ovum and envelopes are to be removed, the sac extirpated if possible, and the peritoneal cavity cleansed of all blood. Particularly is laparotomy warrantable under these circumstances if it is to be done by one accustomed to making abdominal sections. Prior to the twelfth week the whole sac and contents can be removed. If it is allowed to remain under any circumstances, it should be stitched to the abdominal wall, thorough drainage instituted, while the placenta is being detached and extruded.

Electricity is an American remedy for the treatment of extra-uterine pregnancy, and its use is largely limited to America.

Thomas well remarks that the growing triumphs of abdominal surgery are apt to lead to the conviction that Tait's method of treatment should be a procedure of election. That Tait's advice is not generally justifiable it seems to me is because we have in electricity, prior to the fourth month, a means less radical, more safe, and equally effective. In all cases of doubt use it, and that, too, early, before serious symptoms show themselves. No patient should be permitted to die while we are waiting for the evolution of diagnostic signs. Kill the fetus by electricity. The advantages of the death of the fetus in improving the maternal chances are well known and

recognized. The fetus then not only shrinks in size, but there is a rapid material diminution in the placental and sac vascular supply and attachments, also in the uterus and its appendages. A subsequent operation, if needed on account of the size of the fetus and Nature's inability to dispose of it, is now less difficult and less hazardous. Every day now increases the chances for a laparotomy. In all cases without distinctive evidences of rupture, and after the fourth month, before fetal viability, when the diagnosis is certain or probable, kill the fetus by electricity, and at a subsequent time (say two weeks) choose laparotomy. This operation should not be postponed too long until a peritonitis, a septicemia, and hectic symptoms develop.

Extirpation of the fetal contents or sac by the vagina—an operation which has been successful in the hands of Thomas, Albert Smith, Battey, and others—is a very proper one in selected cases, but it is rarely to be preferred to a laparotomy.

After the seventh month and period of fetal viability, the life of the fetus is to be considered. As the form of extra-uterine pregnancy is now abdominal, primary or secondary, and as there is but very little danger of rupture unless it is traumatic, we should probably wait for the coming of the ninth month, and make a laparotomy about term. If, however, the fetus dies in a false labor at term, we are to again wait for certain indications for laparotomy. We are not to look for relief in Nature's efforts at a spontaneous extrusion—a very tedious, painful, and hazardous thing—but in due time make a laparotomy.

In conclusion, we think we can safely say that by *electricity* in the early months of extra-uterine pregnancy, and by a timely *laparotomy* made *conditionally* only in the earlier months, made *usually* in the later months, ectopic gestation with its fearful mortality is robbed of many of its horrors. Neither one of these two means is a *sine qua non*. Each has its special field of utility. By a judicious use and a timely application of each, according to special indications, it is probable that the mortality of this fearful malady can be reduced to a minimum.

DR. EDWIN RICKETTS said some imputations had been cast on Tait's veracity in the compilation of his statistics. During the time that the speaker was with him—a period of four months—he had free access to all of Tait's cases, and he found not the slightest evidence of misrepresentation.

In referring to the advocates of electricity he would call attention to one singular fact, viz., that these persons are always so very sure of their diagnosis, whilst the operators are not so positive until they have brought the senses of touch and sight into requisition. The speaker believed that an exploratory incision was always preferable to the galvanic treatment.

In Dr. Wenning's case of obstruction of the bowels associated with right lateral version of the uterus, an exploratory incision would have been better before resorting to other measures. The case was not diagnosed until the exploratory incision had been made, showing that valuable time had been lost in resorting to electricity. Exploratory incision would have diagnosed the case early as well as late.

In reply to a question whether the speaker had seen Mr. Tait operate for extra-uterine pregnancy, he said that he was present at five operations, one a case of tubal pregnancy which came to Tait's clinic previous to rupture. Owing to the distended condition of the tube, it was supposed to be a case of hydro- or pyo-salpinx. There was no bluish color of the cervix nor distended veins of the vagina. This was on Monday. The following Thursday the

patient returned all bent up with pain ; rupture of the sac from tubal pregnancy had occurred. The patient was at once operated upon, and recovered. This shows the difficulty of diagnosis even in the third month.

A word as regards the treatment of the placenta. The use of the perchloride of iron as a styptic marks a great progress in dealing with this troublesome structure. Sloughing of the placenta, when it is allowed to remain, is always a serious complication. If instead of being left to slough away it be turned out, the solid perchloride of iron applied as a styptic, and the cavity washed out with warm water, the operation is made much more simple and less dangerous. The use of this agent is not looked upon with the favor that it deserves. Instead of perchloride of iron Dr. Bantock uses matico, it is said with equally good results.

DR. WENNING said, in reply to the criticism made upon the use of electricity before laparotomy in his case, that, in the first place, he regarded an abdominal section unfavorable at this period of pregnancy with the child alive ; secondly, the patient was none the worse after the application of the electrical current, as proven by the negative result ; thirdly, as the operation was nothing more than an exploratory incision, the result would have been the same whether it had been performed early or late. The only difference was that the enlarged size of the uterus made a thorough exploration of the entire intestinal tract impossible, but the absence of all symptoms of occlusion at this time made such a complication improbable.

DR. PALMER, referring to the difficulties of a correct diagnosis in many instances, said he was certain of having seen at least three cases of extra-uterine pregnancy. One was a case in which pregnancy of this form, probably of the tubal variety, occurred in a lady who was under weekly observation for a chronic uterine affection at the time of conception. The extra-uterine tubal sac was noticed in the early weeks before any signs of rupture occurred, and the faradic current was successfully employed. It was many months before the extra-uterine tumor was absorbed. Patient is still living, in good health.

The second case was seen in consultation with Dr. Watson in the East End. The patient had had three sac ruptures on the third, fourth, and fifth months, when he was called. He found her in intense pain, almost moribund. Being unprepared for an operation, and the patient's condition being so unpromising, any surgical procedures were postponed until the next day, in hopes that she would rally. The next morning found her in great pain, although under the hypodermatic use of morphia, and with a feeble, flickering pulse. The abdomen was opened, and a fetus in the fifth month of gestation was extracted from the right horn of the uterus, the pregnancy being of the tubo-interstitial variety. The placenta was likewise removed. A large quantity of blood was removed from the peritoneal cavity. The sac rupture was anterior and to the right. She did not rally, but speedily died.

The third case was seen on Pleasant street, in consultation with Dr. Fisher. The duration of the abdominal enlargement was about fifteen months. The fetus had evidently died at the usual time in false labor. The diagnosis was not absolutely certain before abdominal section, but rested between a multilocular ovarian cyst and the abdominal variety of extra-uterine fetation. The day was set for a laparotomy three days in advance, expecting to find an extra-uterine pregnancy ; but before its arrival, while at one of our hill-top resorts, the weather suddenly changing, the patient was taken with a chill, and the operation was hurriedly undertaken the next day, two days in advance of the time fixed. A full-term dead fetus was removed from the abdominal sac. The sac was stitched to the parietal walls, and the umbilical cord brought through the opening, placenta allowed to remain, a drainage tube being used, after the sac had been freely washed out with warm carbolized water. She died in from twelve to fifteen hours afterward.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF LONDON.

Wednesday, December 4th, 1889.

The President, A. L. GALABIN, M.D., in the Chair.

Specimens.—DR. W. DUNCAN: (1) Abscess of Ovary, Hemato-salpinx and Pyo-salpinx, Subperitoneal Myomata; (2) Hydro-salpinx; (3) Myoma of Uterus, Abscess of Ovary. DR. J. PHILLIPS: Distended Tubes, Hematoliths from Ovarian Cyst. DR. AUST-LAWRENCE: Sponge Tents. MR. J. BLAND SUTTON: (1) Lock of Hair, thirty inches long, from a Dermoid Cyst; (2) Dermoid of Ovary, showing Immunity of the Paroöphoron; (3) Ovarian Cyst, partly Adenoma and partly Dermoid; (4) Tubo-ovarian Cyst.

A CASE OF INVERSIO UTERI; REDUCTION; RECOVERY.

DR. BRAXTON HICKS read notes of a case where a primipara, aged 26, was delivered, as it seemed at the time, naturally. Free hemorrhage followed, the placenta came away without assistance, and the patient did well till the third day, when, during an attempt at micturition, something came down and appeared externally. Efforts to reduce the mass, which proved to be an inverted uterus, by simple manual pressure, proved unavailing even under chloroform. The cervical portion was firmly contracted and resisted pressure. Dr. Hicks at length pressed a speculum with an obturator against the inverted fundus, which was thereby cupped. After steady, gentle pressure the fundus could be felt gradually distending the cervical portion. The hand, placed externally, made counterpressure on the now enlarging ring of the cervix. At the end of ten minutes the greater part of the uterus was restored. The speculum was then withdrawn and the obturator from a larger speculum introduced, so as to give more room at the point of flexion. A minute later Dr. Hicks found the uterus in its normal condition. The first speculum and obturator was then introduced and left for a few hours within the cavity in order to prevent relapse. No bleeding occurred during or after reduction, and the patient made a good recovery. Dr. Hicks dwelt upon the opinions of Drs. McClintock, Aveling, Lusk, and Barnes. He gave full reasons why in this case fundal reposition, condemned by many authorities, proved successful when carried out in the manner indicated in his paper.

DR. HORROCKS asked if the uterus was completely inverted, or whether a small portion of the cervix remained in place. If completely inverted, the "fundal method" of replacement might be better than the other; and there would not be the same objection to the method, because the thickness passing through the inverted os would not be greater than in the ordinary method of restoring the uterus.

DR. W. S. A. GRIFFITH noticed that the case was reported as "spontaneous" inversion. He asked if any Fellow of the Society had himself actually witnessed inversion of the uterus occurring in connection with the

third stage of labor, under circumstances which could be called absolutely "spontaneous."

ON CLOSURE OF THE OSTIUM IN INFLAMMATION AND ALLIED DISEASES
OF THE FALLOPIAN TUBE.

The author, MR. ALBAN DORAN, in this communication dwells on the frequency of closure of the ostium in salpingitis; but the obstruction is often temporary. Obstruction of the uterine end is due to swelling of the mucous membrane or to the development of "Chiari's bodies" from that membrane. Permanent closure of the tube is almost synonymous with closure of the ostium. Salpingitis and perimetritis are the causes of closure of the ostium. Three essential factors in relation to the subject are considered at length: 1. The nature of the ostium and its fimbriae. 2. The nature and varieties of salpingitis, and also of perimetritis as far as it affects the tube. 3. The precise manner in which the ostium is closed in perimetritis and salpingitis. In adhesive perimetritis the fimbriae of the tube are bound down by bands, which thus obstruct the ostium. In salpingitis the ostium is obstructed, incompletely at first by the swelling of the mucous membrane which involves the fimbriae; but permanently in bad cases by infiltration of the submucous tissue and middle coat, which swell over the ostium and cover in the fimbriae. The perimetritic and salpingitic varieties of closure of the ostium, often blended, are demonstrated by specimens and diagrams. The question of timely conservative operations on obstructed non-suppurating tubes is discussed. Dr. Skutsch's "salpingostomy," where a small piece of the tube is excised, appears to be a promising step in that direction.

DR. HORROCKS noted how often orifices in the body were the seat of disease; the ostium was no exception. He thought that it must be difficult to distinguish salpingitic from perimetritic closure of the tube.

DR. RUTHERFORD noted the relation between certain tubo-ovarian cysts and chronic tubal disease, which Mr. Doran had already indicated in other monographs.

MR. DORAN replied that two specimens exhibited that evening were very pure examples of perimetritic and salpingitic closure of the ostium respectively. He maintained his theory that tubo-ovarian cysts were often the result of cystic degeneration of uterine appendages after long-standing inflammation. He admitted, however, that tubo-ovarian cysts might be congenital malformations, in rare instances, as Dr. Griffith and Mr. Sutton had endeavored to prove.

NOTES OF A CASE OF MONSTROSITY.

These notes were read by MR. H. C. HODGES, of Watton, Herts. The patient was a primipara aged 27. There was a large quantity of liquor amnii, and when the membranes were ruptured the presentation was hard to diagnose. The face appeared to present, and a soft pedunculated tumor appeared to lie behind the frontal bone. The forceps would not hold. On delivering the head, the tumor, evidently a brain sac, was ruptured. The fetus proved to be an anencephalous monster. The vertebral column appeared to be malformed; the coccyx curved backward, forming a short tail bearing hair on its tough integumental covering. There was ectopia of the viscera. The fetus was a female.

NOTES OF A CASE OF HEMATEMESIS IN A NEWLY-BORN INFANT.

This paper was also read by MR. HODGES. The child was born at 5 A.M., April 23d, 1888, after a natural and easy labor. At 11 A.M. the physician was summoned in haste, as the child "had hemorrhage." The child was found blanched, with a very faint pulse. All the surrounding clothes were saturated with blood which the child had vomited. The child was put to the breast, without result, and was troubled with constant hiccough. It was kept quiet, and ten minims of hazelin were given every two hours. At 5:30 P.M. a tablespoonful of blood-stained mucus was vomited, and later on a copious evacuation containing blood was passed. The case was complicated by serous discharge from the left ear, with subconjunctival hemorrhage and internal strabismus of the left eye; but within a few days convalescence set in, and the child was perfectly free from all the described symptoms at the end of a month, and has remained well ever since. Mr. Hodges dwelt on the recovery of the child after the loss of a large quantity of blood, and on the value of hazelin. The discharge from the ear, strabismus, and also partial facial paralysis which were noticed in the course of the case, but which soon disappeared, all seemed to indicate injury to the base of the skull, perhaps actual fracture, involving laceration of blood vessels. This, coupled with the bright color of the blood, made it probable that hemorrhage had arisen, not in the stomach, but in the posterior part of the pharynx or its neighborhood, the blood being swallowed and afterwards vomited. In a case described by West, hemorrhage occurred into the arachnoid, causing apoplexy. Other cases of hematemesis in the new-born child might have arisen from a similar cause.

DR. W. S. A. GRIFFITH described a case where hemorrhage from the vagina occurred in a new-born eight months' child. Death occurred from an independent cause; the uterus and vagina were found full of blood. The opportunities for investigating the causes of hemorrhages in infants were very scanty.

DR. DAKIN believed that these hemorrhages were an expression of a general condition which had been called "hemophilia neonatorum." This condition, however, was not, strictly speaking, hemophilia. It seldom or never set in before the fifth or sixth day, so that in Mr. Hodges' case, although the labor was easy, the cause of hemorrhage was most likely traumatic. Dr. Dakin recalled a case of copious vomiting where the child was free from pallor. He discovered a fissure at the base of the mother's nipple. On attempting to draw the breast through a glass shield, blood issued freely from the fissure. This possible source of blood should be borne in mind in similar cases.

DR. HERBERT SPENCER believed in Mr. Hodges' theory, and had several times observed fractures of the base of the skull, causing hemorrhage beneath the periosteum.

DR. C. H. F. ROUTH, on the other hand, believed that the hemorrhage was due to injury of the delicate buccal mucous membrane. He had seen bleeding from the mouth in two premature twins; the mother had encouraged them to suck. In cases of this kind the infant should be fed on raw beef juice or milk.

January Meeting.—THE PRESIDENT, in conclusion, notified that the next meeting would be held on Wednesday, January 8th, 1890.

ABSTRACT.

1. Fraenkel and Kaufmann: A Contribution to the Diagnosis of Abdominal Tumors; with Plate (*Arch. für Gyn.*, Bd 36, Heft 3).—The recent advances in abdominal surgery have contributed greatly towards the neglect of exact clinical diagnosis of abdominal tumors. Laparotomy is nowadays frequently performed without previous careful diagnosis of conditions present, and without due consideration. The authors present the following case, which emphasizes their admonition that more care should be taken in cultivating the means of exact diagnosis before opening the abdomen.

Mrs. G. was sent for operation on account of an "ovarian tumor." She was 51 years of age, well nourished, healthy in appearance, VIIIpara, had always been well with the exception of a severe septic fever after an abortion, menstruated regularly; had noticed a swelling of the abdomen for the last two and one-half or three years. She remained strong and was able to work. Recently the circumference of the abdomen had rapidly increased. First examination seemed to show a tumor of the ovary. The abdomen was equally distended, filled by an elastic and indistinctly fluctuating tumor (largest circumference 104 cm.), which was immovable, extended from behind the symphysis pubis into the cavity of the pelvis, and was distinct from the uterus. The intestines lay behind and above the tumor. No ascites. In the right inguinal region the glands were swollen and somewhat tender; they had enlarged quite rapidly of late. At a later examination the lower border of the tumor could not be felt, either from the vagina or pelvis; the uterus was enlarged, and in it was embedded a swelling the size of a walnut. The right ovary was distinctly felt; in place of the left were several round and soft growths. The uterus was perfectly free and movable, and there was no connection between it and the tumor.

Under these circumstances the original diagnosis of a malignant solid or small cystic ovarian tumor became very doubtful; its independence from the ovary seemed certain. Summing up all conditions, it was concluded that it might be a tumor originating from the peritoneum. Cysts of the omentum or mesentery were to be excluded, also hydrops saccatus peritonei, diffuse tuberculosis peritonei (Koenig), echinococcus, lipomata, etc. Consequently laparotomy was performed. Upon incision two to three teaspoonfuls of dark bloody fluid oozed through the wound, and the tumor suddenly appeared, resembling a very large cystic mole (myxoma placentæ). The entire abdominal cavity was filled with pedunculated, closely packed cysts, ranging from the size of a lentil to a plum, with thin walls, of a yellow-red-dish appearance, and springing everywhere from the peritoneal surface.

The single cysts were extremely fragile and thin-walled; from them partly serous, partly bloody contents oozed. Under the conditions, removal was not to be thought of, and the abdomen was closed. Patient died four days after the operation, of peritonitis. Dr. Kaufmann made the microscopical examination and found the tumor to be a "myxosarcoma telangiectodes hemorrhagicum."

ALB. KROG, M.D.

EXPLANATION OF PLATE.

T, Chief tumor, beginning at the bursa omentalis; F W, Foramen of Winslow; M, Stomach; Ctr, Transverse colon; L, Liver.

ITEM.

The Imperial Society of Medicine of Constantinople has elected Dr. ROBERT BARNES an honorary member and Dr. FANCOURT BARNES an honorary corresponding member.

THE AMERICAN JOURNAL OF OBSTETRICS

AND
DISEASES OF WOMEN AND CHILDREN.

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ORIGINAL COMMUNICATIONS.

A CONSIDERATION OF THREE SUCCESSFUL CESAREAN SECTIONS IN PHILADELPHIA.¹

BY

HOWARD A. KELLY,

Gynecologist and Obstetrician to Johns Hopkins Hospital.

(With six woodcuts.)

BEFORE entering upon a practical discussion of this greatest of all obstetric operations, I will conduct the Society through a hasty retrospect involving a few great leaps even into the pre-historic era, and we will briefly touch here and there upon the luminous points which remain as landmarks in the centuries of the misty past until we come into the clear light of the more certain present.

HOW OLD IS CESAREAN SECTION?

The only possible criterion is *inference*; *strengthened, however, by probabilities which multiply until they assume the proportions of certainty.*

I will exhibit the value of this method of inference by a brief digression.

¹ April 17th, 1888; May 30th, 1888; and May 10th, 1889. Read before the Clinical Society of Baltimore, December, 1889.

It was after long years of patient research among the remains of prehistoric man that the anthropologist was finally able to establish certain broad characters distinguishing a stone, an iron, and a bronze age, and further specific traits of the peoples were worked out after most painstaking investigations.

Later observation revealed the fact that a much easier, quicker method had always lain close at hand, inasmuch as it is a fact that some members of the human race have never differentiated into the higher types, and there are actually now existing upon the earth the descendants and representatives of prehistoric man.

The Lake-dwellers of Maracaibo of to-day find their prototypes in the Lacustrines of Neuchatel, and the habits of the Australian and the Bosjesman throw a flood of light upon the remote races they represent.

In geology, the best commentator upon the phenomena of the past is the most acute observer of the minute changes occurring in the earth's strata to-day.

This law is also potent in the realms of surgery, and, as we shall see, carries us back to the birth of Cesarean section.

Four facts in actual operation to-day demonstrate conclusively the hoary antiquity of Cesarean section, an operation almost as old as the cradle of our race.

In the *first* place, recent records furnish us with the histories of eleven cases of Cesarean section performed by horned animals. The woman near her term, in field, plaza, or barnyard, was caught by an infuriated bull, ox, cow, bison, or buffalo, and ripped open by a thrust of the horn. Eight of these women and five of the children survived this most rough and rapid Cesarean delivery. Three of the children are now living in America, at ages of 37, 22, and 10 years.

When we consider the constant, close association of man with horned animals throughout his whole history, no possible reason can be urged why similar accidents should not be at least as frequent in antiquity as at present.

In the *second* place, three ignorant midwives have been known to resort to this terrible device after finding themselves unable to deliver their patients *per vias naturales*. Two of the mothers and two children recovered from this necessarily crude and unscientific procedure.

No good reason can be assigned showing that the midwives of the past were not at least as daring as their most ignorant representatives to-day.

In the *third* place, in the Uganda, in Central Africa, Dr. Felkin saw an untutored savage perform a very skilful and successful Cesarean section upon a native woman. That this was not a very unusual case may be judged by the fact that he would thus have operated upon a second case, had not Dr. Felkin first obtained permission to try the forceps and thus delivered the woman.

In the *fourth* place, in various parts of the world, at different times and under diverse circumstances, six women, either insane or desirous of concealing the fact of their pregnancy, have ripped open their own bellies and pulled out the child—cases of self-inflicted Cesarean section. Five of the women and three of the children survived this operation.

I might add to these facts the well-known brutality of the armies of the past, citing the numerous instances in which soldiers have been known to rip up pregnant women. It is probable that from observation dating from this practice, associated with the small value of human life at all times, arose the establishment of this operation in Central Africa.

In none of the modes just cited is there any reason why we should fix a time limit to the practice. The operations were either involuntary, under such conditions as have ever surrounded our species, or else were undertaken by persons as uneducated as the most ignorant hundreds or even thousands of years ago.

The Grecian, Hindoo, and Roman mythologies contain numerous records of Cesarean births of deities, and it seems to have been almost a fashion in Rome, in the apotheosis of their great men, to find prophetic indication of their careers in this remarkable form of birth.

Under the false application to the particular case we must distinguish some remote but living fact, never forgotten by our race, and in time elaborated in the folk-lore.

This is as probable as it is that the Diana of Ephesus, with her manifold breasts, representing the fertility of the earth, was not a pure figment of the brain, but was rather suggested by some well-marked cases of polymastia seen at rare inter-

vals—seedlings of thought and speculation which finally crystallized historically in the image of the great goddess.

The first positive fact is the old Roman law commanding that the body of every woman dying in advanced pregnancy should be opened and the fetus extracted, under penalty of death: “Negat rex legia mulierem, quæ pregnans mortua sit, humari, antequam partus ei excidatur: qui contra fecerit spem animantis cum gravida peremisse videtur.”

Throughout the early centuries of the Christian era no important facts were added to this dead letter of the law until, in the year 1500, Jacob Nufer, a gelder, of Sigershausen, Switzerland, operated upon his own wife, in the presence of physicians and two midwives who had courage to remain in the room. The quaint record tells of the skilful stroke with the knife by which the child was exposed, of its cries, and of the clamor of the eleven midwives, who had been shut out, to get in. The operation was successful, both lives being saved. The child died at the age of seventy-seven.

I refrain here from entering into a discussion to determine whether this was a case of Cesarean section or a case of extra-uterine pregnancy. I myself believe it to have been the former. In either case, the Cesarean birth was the intent and expectation of the operator, and serves our purpose here fully as well.

Suddenly in the year 1581 appeared this now very rare treatise, of which I exhibit a copy to the Society, by François Rousset, on “Hysterotomotokie,” or Sectio cesarea—a great work, breaking the soil for all the marvellous records which have followed. Since that historic date operations and writings have never ceased.

In 1796 Wm. Ploquet, professor of medicine at Tübingen, edited a bibliography of medical science which I here present to the Society; in this volume he has collated, under the heading “Partus Cæsareus-Hysterotomotokie,” two hundred and fifteen references—to such an extent had the literature multiplied.

In June, 1837, Prof. Michaelis, of Kiel, successfully performed an operation *for the fourth time* upon Frau Adametz, and expressed confidence in the reports of a number of similar

multiple operations which he had previously collected and criticised.

This case aroused so much interest in court circles that the king stood as godfather, and the Countess van Reventlow as one of the godmothers for the baby, named Frederike Caroline Luise Cesarine.

In 1842 Dr. Winckel, of Berleburg, writes: "It cannot be denied that in most recent times Cesarean section has been robbed of much of its terrors, from the more complete technique on the one hand, and the establishment, on the other, of the obstetrical limits and indications."

Twenty-one years later, Dr. Winckel, the son, writes in similar language in reporting a series of fifteen cases of Cesarean section.

In 1882 the great and classical work of Sänger, of Leipzig, appeared, a volume of 200 pages, based upon the profoundest scientific investigations, and containing proposals for the improvement of the old Cesarean operation, which will in all probability remain for all time substantially as now adopted. From this era in its history the operation has been born anew, having by Sänger's efforts been elevated from the ranks of the most fatal to an acknowledged position among the comparatively safe procedures.

I speak of the Cesarean operation as performed under those proper conditions which it has a right to demand for itself as an essential part of its technique.

The three cases included in this report were operated upon by this method.

CASE I.—*Cesarean Section: Absolute Indication.*—On the 17th of April, 1888, Dr. Ireland, of Philadelphia, called me to see Mrs. J., who was in labor, stating that in the opinion of himself and Dr. Starek, a consultant, nothing but Cesarean section would save the woman's life.

At the time Dr. I. called upon me I had as guests at my house Dr. R. P. Harris and Prof. Gardner, of Montreal. We all three proceeded to her house, a loose frame structure in a small alley in a densely populated part of the city.

We found a wan little woman, only fifty-two inches high, 26 years old. She was evidently in a state of profound shock; she had a pinched, anxious expression, and a thready pulse running along at 142. Two weeks previously she had had regular pains, when she sent for the midwife, who stayed

with her for five days, when, finding that in spite of frequent severe pains she made no progress, she sent for Dr. Ireland, who watched her for nine days longer. The old midwife, with an experience of fifty years, stated that she had never seen any woman suffer such severe pains. When we saw her the pains had become very feeble and irregular. The waters had drained off three days before.

The child was feebly alive, with its head above the superior strait, in the first position. Upon carrying the finger up into the pelvis, it impinged everywhere against dense, hard cellulitic masses, so completely choking it that the only structure which could be recognized at all was the cervix, immovably fixed as if embedded in a cake of ice. It would have been utterly impossible either to dilate or to introduce the smallest instrument into the uterus.

The external pelvic measurements were: sp. i., 19 cm.; cr. i., 25 cm.; d. b., 15 cm.; d. tr., 29 cm. The conjugatæ could not be measured, but the vera was estimated at about $5\frac{1}{2}$ cm.

The measurements were manifestly of no practical importance whatever, as an absolute indication lay in the condition of the soft parts. The alternatives were evidently either a desperate Cesarean section or death. Prof. Gardner and Dr. Harris both concurred with me in feeling that a moral obligation rested upon me to give the patient the last desperate chance which remained. And I shall not soon forget the emphasis with which Dr. Harris dwelt upon the fact that this was one of the most unfavorable cases on record, and there was very little hope of her pulling through.

All the preparations for operation were being made while we were discussing the case. She was at once etherized, and the table, instruments, and water arranged in the corner of the bedroom where we could get the best light.

It was very clear that in this case a few minutes of time saved might save a life. Every arrangement was made, therefore, that the various steps of the operation might follow each other in rapid succession, without any delay incident to getting things out of the satchel or threading needles.

She was put upon the table, the vagina douched, the abdomen shaved and thoroughly washed. An incision was made over the uterine eminence through the umbilicus. The uterus was incised *in situ*, *placenta prævia cæsarea* discovered, the placenta avoided, the membranes perforated to one side, and the child caught. The body escaped easily, but the head stuck badly. I first tried to lift it out as the body was raised up through the incision; then Veit's method of freeing the after-coming head was tried in vain; it finally yielded to powerful traction upon the legs.

As the child made its escape, the lower angle of the incision was torn for an inch into the lower uterine segment.

The head of the child had thus lain in the lower segment of the uterus, between the contracting corpus above and the undilated portion of the cervix, felt through the vagina, below.

The asphyxiated child (a female) was handed to Prof. Gardner, who succeeded in resuscitating it with much difficulty. It lived for a week, dying with jaundice.

The placenta and membranes were delivered with the child, and the uterine incision closed at once by twelve deep and twelve superficial silk sutures.

The abdomen was carefully cleansed and the uterus returned, the omentum drawn down back of it, and the abdominal incision closed.

Time consumed.—The child was born in two minutes, and

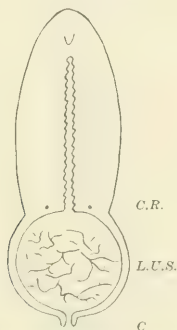


FIG. 1.—The upper portion of the uterus (*U*) is seen well contracted down to the contraction ring (*C.R.*). The lower uterine segment (*L.U.S.*) is distended full of clots; the undilated cervix (*C*) lies below this.

in thirty-five minutes from the beginning of the operation the last abdominal suture was inserted.

Hypodermatics of ergot and brandy were given repeatedly throughout to stimulate a flagging pulse and insure uterine contraction.

In three days after the operation the pulse was 88 and the temperature normal. The dilated lower uterine segment in which the head had lain did not contract at all, and gave rise to a novel complication in the convalescence (Fig. 1). It formed a large reservoir in which blood clots accumulated and became fetid. I discovered this on the third day and removed

a large amount of débris, and after that kept it clean by syringing the cavity out twice daily (Fig. 1).

The inflamed vaginal tissues began to break down in the first week. Later I removed a large, crackling piece of the cervix, hooking it down with my fingers. The uterus must have become united to the abdominal incision at a very early date, for with the breaking down of the cervix a physometra developed, and both uterine and abdominal walls broke down, and there was free discharge and communication between the

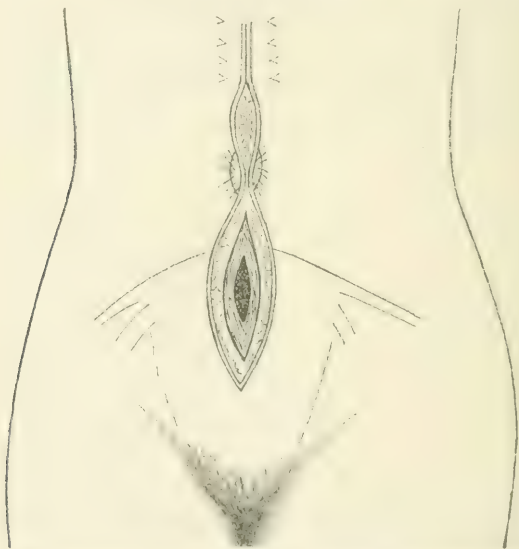


FIG. 2.—Showing utero-abdominal fistula (*f*) sixteen days post operation in Mrs. J.'s case.

inner surface of the uterus and the outside, through the abdomen (Fig. 2). There was at no time any reaction whatever upon the part of the peritoneum. For two or three days, while the discharge was becoming established, the temperature went up, but she was not in any way affected by it. Two weeks after operation a phlebitis developed in the right leg. In spite of these complications she made an easy and a comfortable recovery.

She is to-day a stout, rosy woman, in perfect health.

The cervix gradually contracted down into a hard, stellate cicatrix in the vaginal vault, the abdominal wound closed completely, but every month a little, soft cicatrix in the wound became intensely blue two days before the period, breaking down at the time, allowing a stillicidium of blood for four days.

One year after the operation the pelvic measurements were repeated and a double promontory discovered. The vagina was soft and natural, there was no leucorrhea, and the pelvis was entirely free from any exudate. The uterus was attached to the abdomen near the umbilicus, drawn out and cord-like. It is probable that, if she should live as long, the condition of the uterus will closely resemble that in Mrs. Reybold's case, operated upon by Prof. Gibson in 1835, and examined post-mortem fifty years later.

Dr. Harris writes me "that in Mrs. Reybold's uterus there was no trace of a uterine cicatrix or thinning, but the fundus was elongated by tension to four and one-half inches. This elongation was thin and resembled the tongue of a small dog. She bore four children between the 22d and 28th years, and ceased at the latter age, perhaps because of the condition of her uterus and its position in the pelvis. The adhesion between the uterus and abdomen had given way during a period of years and been reduced to two inches."

Previous to the labor in which I attended her, Mrs. J. had been pregnant four times, miscarrying at four and one-half months, two months, six weeks, and nine weeks.

I am indebted to Dr. Harris for the table on pages 234 and 235.

Dr. Harris writes: "My table of Philadelphia Cesarean cases is much more than a condensation of the facts contained in the references given, and presents many points of personal observation. Each case contains in few words its most important facts, and the final results, where death of mother or child has occurred at a remote period, are given. The subjects of operations 1, 2, 5, 7, 8, and 11 were either well known to me or I was present when they were operated on. I have also seen, at different times, nearly all of the children saved, and the autopsies of cases 1, 2, and 7. Only one of the ten Cesarean women is now living, and she is the last on the list. Of the children, one survives at the age of 53, with three of her eight children; a second is a girl of 18; and the third and last, presumed to be living, is a boy of 7. We shall, no doubt, present in the future a much more creditable record than the

CESAREAN OPERATIONS—"OLD STYLE," "PORRO," AND "SÄNGER"—PERFORMED IN PHILADELPHIA. TABULATED BY
ROBERT P. HARRIS, M.D.

No.	Date.	Operator.	Style of operation.	Age.	Color.	Height.	Conj. Vera.	Number of Pregnancy.	Hospital or Private.	Cause of difficulty in labor.	Time in labor before operation.	Condition of woman at time of operation.	Result to woman.	Result to child.	Time of survival and cause of death in woman.	Time of survival of child.	References.
1	March 25, 1835	Prof. William Gibson, son.	Old. Uterus not sutured.	26	White, Irish.	4 8	Ins. 1 1/2	Third.	Private.	Rachitic deformity of pelvis.	12 hours.	Favorable.	Recovered.	Lived.	Died Aug. 15, 1885, aged 76 years.	Living in 1888; has 8 children.	In Am. Jour. Med. Sci., vol. xvi, 1835, p. 343.
2	Nov. 5, 1837	Prof. William Gibson, son.	Old. Uterus adherent to abdominal wall.	28	White, Irish.	4 8	1 1/2	Fourth.	Private.	do	10 hours.	Excited. Pulse 112, fell to 88 after the operation.	Recovered.	Lived.	Died Oct. 4, 1881, aged 43, leaving 2 daughters and a grandchild.	Died Oct. 4, 1881, aged 43, leaving 2 daughters and a grandchild.	Opus cit., vol. xxix, 1838, p. 13. <i>Autopsy</i> ; Opus cit., Oct., 1885, p. 422.
3	Sept. 17, 1860.	Dr. Walter F. Atlee.	Old. Uterus not sutured.	31	White, Irish.	Not taken.	2	Third.	Private.	do	Several hours.	Favorable.	Died.	Lived.	Died in 6 days from intestinal obstruction.	Living in 1888, a girl of 18 years.	Opus cit., April 1870, p. 393.
4	Feb. 27, 1878.	Dr. Rowland Curtin.	Old. Uterus sutured with catgut.	20	Black.	4 3	2	First.	Hospital.	do	2 1/2 hours.	Apparently favorable.	Died.	Lived.	Died on 7th day, slight peritonitis, fibrous heart clot, wounds gaping.	Died in summer of 1878.	Am. Jour. Obs., 1878, p. 613.
5	Sept. 22, 1880.	Dr. Elliott Richardson.	Porro. Uterus not sutured.	25	White, Native.	3 10	2	First.	Private.	do	Not in labor, 8 1/2 months pregnant.	Favorable.	Recovered.	Lived.	Died Feb. 24, 1883, of cirrhosis of the liver and Bright's disease.	Living in 1883, a well-grown and healthy boy.	Am. Jour. Med. Sci., Jan., 1881, p. 36. <i>Autopsy</i> ; Am. Jour. Obs., vol. xvi, 1888, p. 534.

6 Mar. 5, 1883.	Prof. Anna E. Broom.	Old. Uterus sutured with silver-wire and silk.	Black.	Not taken.	27-10.	First.	Hospital deformity of pelvis.	Very unfavorable. Pulse 140. Temp. 102°. Forceps severely used before admission.	Died.	Living.	Died of septic peritonitis in 35 hours. Uterine wound of right side fractured by the forceps.	Died in 32 hours: parietal bone of right side fractured by the operator.
7 June 30, 1883.	Prof. William H. Parrish.	Poro Muller.	White. Native.	3	First.	3	do	Not in labor: 8% from albuminuria.	Died.	Lived.	Died in 42 hours of exhaustion and nephritis.	Died July 18, 1883. <i>Am. Jour. Obs.</i> , vol. xvi, 1883, p. 1197.
8 Nov. 12, 1884.	Dr. Thomas M. Drysdale.	Singer. 11 1/2 deep and 11 superficial sutures.	White. German.	Medium	Normal.	First.	Private. Uterine fibroid blocking up the pelvis.	Very unfavorable. Pulse 124. Ante-partum hemorrhage.	Died.	Died in 24 hours of septicæmia. Uterine peritoneum united.	.....	..... <i>Med. News</i> , Nov. 26, 1887, p. 631.
9 Sep. 30, 1885.	Prof. William H. Parrish.	Singer. 11 3/5 deep and 4 superficial sutures.	White.	.....	Third.	.....	Hospital fibroids blocking lower segment of the uterus.	Pulse 124; much exhausted.	Died.	Died in 12 hours of exhaustion and septicæmia.	.....	..... <i>Trans. Am. Gynecol. Soc.</i> , 1886, p. 434.
10 July 15, 1886.	Dr. Elliott Richardson.	Old. Uterus closed with silk.	White.	.....	.....	.....	Hospital cerebral apoplexy.	Hopeless. Operation in interest of fetus.	Died.	Living.	Died in 5 hours from the apoplexy.	Died in 4 hours: the operation, July 19, 1886.
11 Apr. 17, 1888.	Dr. Howard A. Kelly.	Singer. 12 25 deep and 12 superficial sutures of silk.	White. Native.	4	2%	Fifth. Miscarriages.	Private. Infantile pelvis; no traces of branes; rickets; very small bones, feet and hands.	Very unfavorable. Pulse 142. Version and forceps fortunately not tried.	.....	Living.	.....	Died in 7 days: delicate and jaundiced.

past now shows. No case upon the list, not positively hopeless at the time of the operation, was in a more unfavorable condition, to judge by the rapidity of her pulse—carefully counted by me at 142—than was the last; and this rose to 150, and fell to 130, during the operation. Still this patient recovered, notwithstanding the fact that the posterior lip of her cervix sloughed away, and the uterine and abdominal wounds gaped open after three days' closure. But during these three days, when the method of uterine suturing prevented any leakage from the uterine into the abdominal cavity, local peritonitis was uniting the uterus and abdomen around the wounds, so that the peritoneal cavity was a shut sac when the sutures no longer held their edges in contact. This salutary process of nature has saved the lives of several women in this country after the Cesarean operation, and was of very vital importance in favoring the antiseptic control of the last case. More than sixty years ago, Dr. John L. Richmond, of Newton, Ohio, syringed out daily, through a catheter, an occluded uterus from which he had removed a fetus by gastro-hysterotomy, and kept up this cleansing process with warm soap-water until the eighteenth day. Should Mrs. J. again become pregnant, the Cesarean operation can in all probability be performed, as was done in case 2 under Prof. Gibson, without opening the peritoneal cavity, and with comparatively little risk to life if done early in labor. The cicatricial condition of the cervix will no doubt prevent the possibility of success in an attempt to deliver her prematurely *per vias naturales*; and the size of her pelvis would require an induced labor at too early a period to save the fetus. In several instances in this country, where there was no pelvic deformity, such a loss of uterine tissue after labor as in Mrs. J.'s case has proved to be so serious a preventive of cervical dilatation that delivery could only be effected by abdominal section. It will be of interest also to note the effect of utero-abdominal adherence upon the process of conception. Whether this produced sterility in Mrs. Reyhold (case 2) after the age of 28, or not, has been questioned; but it is a plausible explanation of her cessation to conceive after having been four times pregnant in a few years. At her autopsy it was discovered that her fundus uteri had been drawn out to a length of $4\frac{1}{2}$ inches by the old adhesion between it and the upper part

of the abdominal cicatrix. The repeated filling of the bladder and the motions of the abdomen tend to break up these adhesions, but in Mrs. Reybold there was still an inch of attachment, after fifty years, where there had been originally four or more inches.

"*The last twelve Cesarean operations in the United States* (March 22d, 1887, to April 17th, 1888, inclusive) were all performed, with some variations of detail, according to the method of Snger, and resulted in saving 7 women. Of the 5 fatal cases, only 1 was regarded as *favorable* at the time of the operation, and here death resulted from diphtheritic endometritis, there being no peritonitis, and the wounds being found united after five days. The other deaths were: 1st, *in nine days*, from an abscess of the abdominal wall bursting into the peritoneal cavity and producing septicemia; 2d, *in forty-four hours*, from shock, the forceps having been used over an hour; 3d, *in sixty-two hours*, from uremia, in a case regarded as hopeless from kidney disease; and 4th, *in seventy-one hours*, from coma, attributed largely to morphia in an exhausted, strumous subject. Ten of the twelve children were delivered alive, and eight were still living when the respective cases were reported. There have been 5 operations, with a saving of 3 women and 4 children, since January 1st, 1888."

CASE II.—*Cesarean Section: Relative Indication.*—With the operator it was the option between craniotomy on the living child and the Cesarean section; the parents, however, allowed no choice, as they unhesitatingly chose the Cesarean operation.

History.—Mrs. G., 26 years old, of Irish parentage, had had two children—a male child, three years ago, delivered bruised and dying after a difficult forceps labor; in the second labor she gave birth to a girl of "such puny size that no one thought she could possibly live." My patient had two sisters, both with strongly contracted pelves. One of them, after a succession of craniotomies, finally died in a frightful labor, in which the body of the child was torn from the head, which remained in utero, while the mother died.

The pelvic measurements of Mrs. G. are: sp. i., 24 cm.; cr. i., 26 cm.; tr., 29 cm.; d. b., 16½ cm.; c. d., 8 cm.; c. v., estimated 6½ cm. to 7 cm. She has, therefore, a markedly flattened pelvis.

¹ Mrs. J. is again pregnant, being now about in her fourth month.

Dr. Harris first saw her in consultation with me, and later Dr. C. P. Noble. Both of my consultants concurred in estimating the child as too large to pass the superior strait without craniotomy.

She entered the Kensington Hospital a week before the expected confinement, and was immediately put upon preparatory treatment—baths, vaginal douches, dieted, and the emunctories carefully regulated.

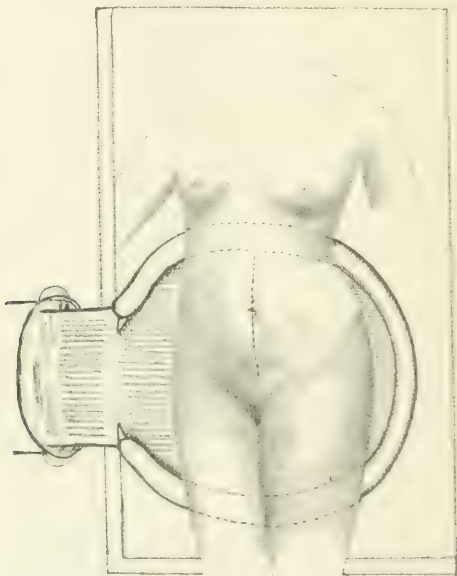


FIG. 3.—Showing ovariotomy pad in position for operation on Mrs. G.; also line of the incision (dotted).

She measured at the umbilicus 99 cm., and 44 cm. from ensiform cartilage to pubes.

Her pulse rate was 120; the fetal heart beat 140 to the minute in the first position.

I could feel the fetal head distinctly, and estimated the occipito-frontal diameter as 12 $\frac{3}{4}$ cm., and the length of the flexed body of the fetus at 30 $\frac{1}{2}$ cm.

On the 10th of May I punctured the membranes, letting

slowly out about a pint of amniotic fluid. An hour later the uterus was contracting regularly, when she was etherized and placed upon the ovariotomy pad (Fig. 3).

Drs. Harris, Ireland, P. S. Carpenter, Ziegler, A. K. Minich, W. N. Ferguson, Wm. R. Lincoln, Geo. McKelway, and Shelly were present at the operation. Drs. Robb and Noble assisted.

After the preliminary isolation of the field of operation by prepared towels and gauze, the incision was made, one-third above and two-thirds below the umbilicus; and while the assistant pressed the abdominal walls in on the exposed uterus, a rapid incision from fundus to lower segment exposed the child. An arm protruded in the incision, was caught, and the body delivered; the head stuck in the lower uterine segment, as in the former case, and was only delivered by careful efforts with the fingers hooked into the maxillary fossæ, *after extending the incision* down into the thin lower segment for 3 cm. The placenta lay attached to the posterior surface of the uterus. A large venous sinus which was opened in the incision was temporarily clamped. In two minutes from the beginning of the operation, a lusty female child was born crying and handed to Dr. Minich.

The baby weighed 6 lbs. 15 oz.; length flexed, 30½ cm.; whole length, 51 cm. Occipito-frontal diameter, 13 cm.; occipito-mental, +15 cm.

Placenta and membranes were delivered together by grasping the placenta with the open hand and twisting it off.

The uterus was next lifted out of the abdomen, and the abdominal cavity behind protected by cloths wrung out of hot water and laid across the incision. The uterus remained flabby at first and disposed to bleed. While I excited contraction by kneading, Dr. Robb grasped the cervical portion with both hands and thus controlled the hemorrhage by manual pressure. He continued this until I had closed the uterine wound by seven deep and fifteen superficial silk sutures (Fig. 4). These were drawn up *firmly*, not *very* tight, until the small area in the immediate neighborhood of each stitch was blanched. With the bleeding thus controlled and the uterine wound smoothly coapted, the uterus was returned to the abdomen, which was well washed out with hot water, and finally closed by silk sutures, four to the inch. A bichloride cotton dressing was laid over the wound, held in place by a simple binder. During the operation two hypodermatics of ergotin were given (4 grains) and one of tincture of digitalis. Her pulse was 130, dropping rapidly to 114 and 108.

The next morning, pulse 86, temperature 99°. Comfortable. Constant slight sanious flow per vaginam.

June 1st, 7:30 A.M., pulse 84, temperature $99\frac{1}{3}^{\circ}$. "Slept splendidly last night." 10:30 P.M., pulse 82, temperature $99\frac{1}{3}^{\circ}$.

June 2d, milk coming freely into breasts; pulse 75, temperature 99° .

She began at this time to suffer much from fissured nipples, which sent her temperature up and forced us to wean the child. Her general condition continued excellent throughout. Two weeks after delivery she had a mild phlebitis, which did not prevent a rapid and complete recovery, and she soon after went home with her baby, named Caesarina. The child lived fourteen and one-half months, dying during dentition in summer.

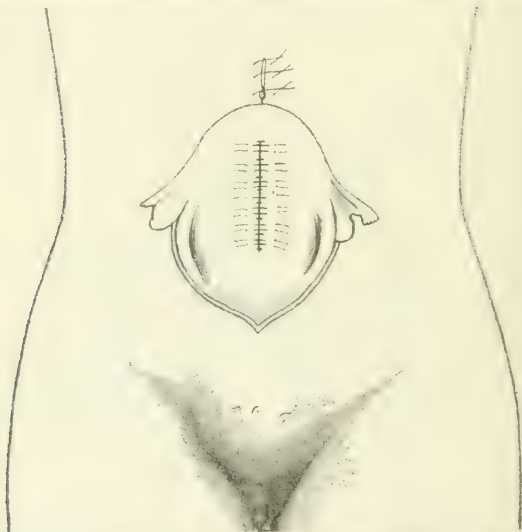


FIG. 4.—Mrs. G. Showing deep sutures tied, and superficial sero-serous sutures in place ready to tie.

She again became pregnant early in 1889. I examined her repeatedly, and, as soon as I judged that the head was getting beyond a safe size, sent her to the hospital to have labor brought on at eight months. I introduced a bougie into the uterus on November 9th to start the labor.

The following letters from Dr. Noble, the present surgeon to the Kensington Hospital for Women, tell of the difficult labor by which he delivered a child weighing $5\frac{1}{3}\frac{1}{2}$ lbs., or $30\frac{1}{2}$ oz. smaller than the Cesarean-section baby:

DEAR DOCTOR KELLY:—I delivered Mrs. G. with high forceps at 1:30 A.M., November 12th. There was no pain following first bougie. I introduced second at 9 P.M. Sunday. Pains began at 11 o'clock. At 1 o'clock Monday no advance. I introduced Barnes' bag, 1, 2, 3, at intervals of about three hours. Hard labor after 9 A.M. I ruptured membranes and applied a binder at 5:30. Head was still above superior strait. Hard pains continued until 11, when they began to die away. A little after 12, midnight, I concluded that it was best to deliver. Baby is girl, and alive; apparently all right. I write this at 3 A.M. Will send measurements and details.

Yours truly, CHAS. P. NOBLE.

DEAR DOCTOR KELLY:—In a note to Dr. Robb, written this morning, I referred to Mrs. G. She continues to do well, as does the baby. But I shall watch her with some anxiety. The placenta was adherent to the anterior wall, and was detached with some difficulty, and in the region of the scar the uterine surface was not perfectly smooth. I have not measured her pelvis externally, but I am certain the internal measurements are less than were supposed. I make the indirect conjugate three and three-sixteenth inches and the estimated true conjugate two and five-eighth inches. I am certain there is not much error about this, from the measurements of the fetal head. The head came slightly into the true pelvis after twenty-six hours of labor, during thirteen of which the labor was hard; waters evacuated about seven hours. When I drew it down with the forceps, there was so little room as to crowd the soft parts very much. It was "a very tight fit." I applied first the Simpson forceps, but the widely separated shanks stretched the perineum so much that I took it off, applied the Hodge forceps, and delivered after the manner of Pajot. The mechanism was that characteristic of the flat pelvis, the occiput being directly in relation with the left ilium. The head was semi-flexed, the anterior fontanelle lower than the posterior. I delivered without using force.

The fetal measurements are as follows, taken three-quarters of an hour after birth, without using pressure with cephalometer: B. p., 7.5 cm.; b. t., 6.5 cm.; bimestoid, 6.5 cm.; sub-oc. breg., 9 cm.; oc. front., 10.5 cm.; oc. men., 11 cm.; trach. breg., 9.5 cm.; front. men., 7.5 cm.; bisacrom., 11 cm.; bisacrom. circumf., 31 cm.; suboc. breg. circumf., 30 cm.; oc. front. circumf., 31.5 cm.; length, 44.5 cm.; weight (naked), $5\frac{1}{2}$ lbs.; sex, female.

As I measured the head three-quarters of an hour after labor, when the transverse diameters were only slightly greater than when in the pelvis; and as the bitemp. diameter was in relation with the c. v.; and as all available space was occupied,

I am sure the c. v. is but little more than 6.5 cm., certainly not more than 7 cm.¹

CASE III. *Cesarean Section; Absolute Indication; Pelvis choked by Large Bony Tumor*.—Mrs. S., German, age 34, IVpara, 6, 5, 4, 3. Regular menstruation began first at 20. She is of a markedly rachitic build, with curved tibiae. She had puerperal fever after her first and third confinements. The second pregnancy terminated in a miscarriage at six months. She came to me April 25th, 1889, referred by her physician, Dr. Parcels, of Lewistown, Pa. She had been delivered in her last two confinements by Dr. Parcels, who sent me a very graphic account of the almost insuperable difficulties he encountered. In January, 1885, he estimated the conj. vera at two and one-half inches, and delivered, performing craniotomy, crushing the skull and then turning. Again in June, 1885, he was called to her, when he found, by careful measurement, that the conjugate had diminished from two and one-half to one and three-quarter inches. Again it was necessary to perform craniotomy and version, he encountering even greater difficulties than at first. This operation was accompanied by great loss of blood.

Pelvimetry, April 25th, 1889.—Sp. i., 22 cm.; cr. i., 25½ cm.; d. b., 17½ cm.; tr., 31½ cm.

The vaginal outlet much relaxed, filled posteriorly by a large rectocele. Upon introducing the finger into the pelvis, it at once strikes a bony tumor which so completely chokes the lumen of the pelvic canal that it leaves but a small crescentic area to the left for the emunctories (Figs. 5 and 6). The tumor is densely hard, like bone, with here and there a curious sensation of crackling, as if a shell were being indented. It projects out of the pelvis under the right pubic ramus. High up on a level with the superior strait, at the left extremity of the transverse diameter, lies the cervix uteri with a marked posterior split. At this point the lumen between the tumor and the margin of the strait is two centimetres (Fig. 5). Just behind the symphysis pubis the lumen measures one centimetre (Fig. 6). The whole of the uterus with the child lay thus wholly without the pelvis, the uterus lying with its cervix dipping into the pelvis on the extreme left, and its fundus lying wholly in the right hypochondrium. The head of the child lay over the cervix, and the buttocks under the liver. The circumference at the umbilicus was 95½ cm. on May 9th. The fetal pulse was 30, heard 2 cm. below and 10 cm. to the left of the umbilicus. The urine was of a pale amber color, specific gravity 1.004.

¹ January 15th, 1890, the child is living, gaining rapidly in weight, and in excellent general condition.

Previous to operation she was carefully examined by Drs. Dulles, Harris, E. Wilson, J. T. Johnson, Parish, Platt, and Parcels. The usual careful preparations were made before the operation, cleansing her skin and quickening its activity, and getting her kidneys and bowels acting freely.

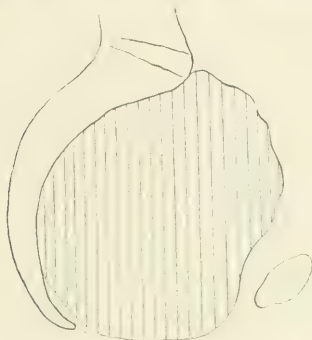


FIG. 5.—Sagittal section of the pelvis in Case III. Barred area is the tumor.

Operation.—May 10th, 1889, in the presence of a large number of visitors, at the time determined by me to be the completion of her pregnancy, she was brought to the table

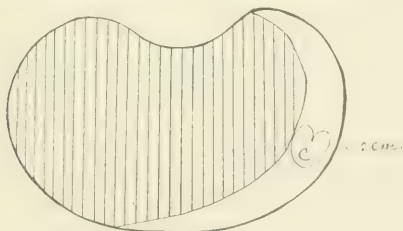


FIG. 6.—Pelvic inlet in Case III. Barred area occupied by tumor *c* is the cervix uteri.

under ether, the abdomen again thoroughly scrubbed, the genitals shaved, and the vagina douched. The field of operation was next isolated by cloths above and below, and a large piece of gauze laid over the whole, torn open over the site of the tumor. The operation was conducted through this rent. In

this way the field was completely isolated. An incision twenty centimetres long was made in the median line, one-third above and two-thirds below the umbilicus, exposing the uterus. The incision was made at once in the uterus *in situ*, fifteen centimetres in length. The placenta lay immediately under the incision (*placenta prævia cæsarea*). Pushing to the left of this, the membranes were broken through and a prolapsing arm caught. The body came at once, but the head stuck, and I was unable to deliver it until I had first enlarged the incision by two centimetres down into the lower uterine segment. The child cried lustily as he came out with two coils of cord about his neck; the cord was at once clamped between two pairs of forceps and cut between, and handed to Dr. Milliken, to whom I am indebted for some valuable notes made. The placenta and membranes followed the child.

While Dr. Robb grasped the uterus at the cervix, constricting the vessels, I lifted the uterus out of the abdomen and proceeded to pass the deep sutures. These grasped the peritoneum and the muscularis down to but not including the decidua. The superficial (sero-serous) followed, and completely hid the deep line from view. The bony tumor was then carefully examined through the abdomen. The pelvis was found choked, all but the narrow crescentic area mentioned; the tumor was flattened rather than convex on its upper surface, extending but slightly into the abdominal cavity.

After carefully cleansing the vesical pouch, the iliac fossa, and the retro-uterine space, the uterus was returned and the abdomen closed.

Her pulse before the operation was 104; after taking ether for eight minutes it was 120; towards the end of the operation it was 140. She was etherized in fifteen minutes.

The operation began at 3:42 p.m.; the peritoneum was opened at 3:42:15; the child was handed to the assistant at 3:43:15; the uterine suture was commenced at 3:45; the eight deep sutures were in place at 3:51; the thirteen superficial sutures were in place by 3:57:10; abdominal sutures were started at 4:00:30, completed at 4:07.

The child was thus born in a minute and fifteen seconds, and in nine minutes from the beginning the uterine wound was closed and all danger of any serious loss from hemorrhage was over. The duration of the operation up to the one point common to all abdominal operations, the closure of the abdominal incision, was fifteen minutes. The child, a healthy boy of seven pounds weight, was livid when born, and did not exhibit any apnea. His pulse, 140 at birth, became 152 in two minutes.

The fetal diameters were: Biparietal, 8 cm.; bitemporal, 7.25 cm.; bimalar, 7 cm.; suboccipito-bregmatic, 9 cm.; oc-

cipito-frontal, 10.5 cm.; occipito-mental, 12 cm. Circumference, occipito-frontal, 33 cm.; circumference, suboccipito-bregmatic, 31.5 cm. Bisacromial diameter, 11 cm.; bisacromial circumference, 33 cm. The length of the child was 46 cm.; strongly flexed, 23 cm.

Patient after the Operation.—Her pulse for two days varied between 120 and 108. On the third day it dropped to 86, and remained after that time between 78 and 90.

Her temperature varied before the operation from 98° to 99°. On the second and third days after operation it just crossed 100°, dropping on the third day to 99°, after that continuing normal.

Eight deep and nine superficial sutures were taken out from the abdominal wall seven days after the operation, and the line of union found to be perfect throughout. She had one stool the day after operation, and on the third day a very large passage, filling a bed-pan. The baby nursed from the first.

She rose from bed in two weeks. I would gladly have kept her there longer, but she was becoming so restive over her unusual inactivity that I was obliged to allow her to sit up. Nineteen days after the operation she took a long journey home by railroad.

I cannot close the record of these three cases which have come under my care, without adding a few comments touching upon several features which, although minor in character, proved valuable in providing comfort for the operator and in hastening the completion of the operation—a point of value so long as it is subordinated to utmost attention to details and nothing in the completeness of the operation is sacrificed.

The *ovariotomy pad* was of great comfort, allowing the use of an abundance of water without any anxiety as to whether bed, clothing, or floor was being deluged. In this way the abdomen and genitals were douched, the child delivered, and the discharges caught by the bottom of the pad, prevented by the rim from running off on to the table, and were conducted into the bucket on the floor.

I can see no disadvantage in *setting the time for the operation*, as I did in these last two cases, and many very great positive advantages. The cervix in both cases was amply dilated and allowed the free discharge of the lochia. I put the last patient in the lithotomy position after the completion of the operation, with the expressed intention of dilating the cervix, but I found it already abundantly open. By setting his own

time the operator is sure of all the assistance he needs, and can prepare himself for the operation, and operate when he is in the best condition. There is also no hurried, unsatisfactory gathering-up of the instruments, and the general dissatisfaction attending haste. I know of an operator who was summoned a long distance at two o'clock in the night, and obliged to operate with an unsatisfactory light, to say nothing of the other inconveniences. I have also known of an operator, anxious to secure the manifold advantages, waiting for the daylight several hours beyond the time when his judgment told him the operation ought to be performed.

It was a mistake to puncture the membranes in the second case : they should always be preserved, as it is much easier to deliver a child swimming in the amnion than from a dry, contracted uterus. My intention was to start the labor to such an extent that the cervix would be well dilated.

A feature the importance of which can hardly be exaggerated is the rapidity with which the successive steps follow one another. I do not mean haste, but refer to the commonest of all sources of delay—waiting until something is sought which is sadly needed but was forgotten in the preparation, until some silk is untangled or some needles threaded which ought to have been ready from the start. I cannot conceive how an uncomplicated operation can be dragged out to an hour and a half or longer, as has been the case. The shock of the procedure must be a very significant item in the death rate of these operations.

Of the difficulty in delivering the head experienced in all three cases, I desire to say something more *in extenso* at another time. It is an annoyance which has distressed many operators.

THE SURGICAL TREATMENT OF LOCAL AND GENERAL PERITONITIS.

WITH REPORT OF TWO CASES OF GENERAL PERITONITIS DUE TO PERFORATION, SUCCESSFULLY TREATED BY FREE INCISIONS, IRRIGATION, AND DRAINAGE.¹

BY

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My excuse for bringing this subject before you to-night is its importance, and the firm conviction that there are hundreds of men and women dying from peritonitis who might be easily saved if the medical profession would recognize the fact that a majority of such cases could be saved by prompt surgical interference.

The number of cases occurring in every town of any size is incredible to any one who is not specially interested in studying the subject. Here in New York, one would suppose well-to-do patients would not be denied in many cases the only chance of being helped by laparotomy or surgical treatment; but not in one in ten of such cases, even in New York, is the question of operation considered, unless all other means fail, and then, with rare exceptions, in cases of general peritonitis it is too late.

For the past seven years I have worked faithfully with my gynecological colleagues to try and convince them that, practically speaking, there is no such thing as chronic pelvic cellulitis; that the so called cases of cellulitis—especially those called chronic, where “attacks of cellulitis” are constantly “being lighted up”—are nothing more or less than cases of local peritonitis due to salpingitis and ovaritis, and when there is positive evidence of the formation of pus, or the patient is bed-ridden from frequent attacks, that the only rational treatment is by laparotomy; that pelvic abscesses, nine times out

¹ Read before the New York Obstetrical Society, November 5th, 1889.

of ten, are merely the result or the sequel of neglected cases of local peritonitis, and although, when actively septic and readily reached by the vagina, *behind the uterus*, they should be opened and drained, the only certain and radical cure is, as a rule, by laparotomy; and, when laparotomy is resorted to, the pus should be first carefully drawn off and the sac rendered aseptic by washing it out with antiseptics, and not sewn into the abdominal wound, but enucleated and removed with the diseased tube and ovary nearly always found in it: that even during the acute stage of either local or general peritonitis laparotomy should be done, if life is threatened either by sepsis or intestinal obstruction.

Success has overcome almost all opposition among gynecologists, and, as a rule, the above is the accepted practice. When I began I was accused of mutilating women; and even to-day some of my old teachers, while admitting my success to those who ask about me, still claim that I am too fond of the knife.

Although I do not now practise general surgery, I am interested in all abdominal surgery, and I am convinced that the general surgeons will soon adopt about the same rules of procedure in treating local and general peritonitis occurring in the abdomen, as gynecologists have established as the best plan of treating pelvic peritonitis.

My experience in peritonitis from typhlitis or perforation is limited, but my large experience in peritonitis the result of salpingitis warrants me in at least stating my views.

The general surgeons have been lately going through the discussion as to whether the abscesses formed about the vermiform appendix and cecum are intra- or extra-peritoneal. It is exactly similar to what gynecologists have years ago been through in regard to pelvic abscesses. I believe that the intra-peritoneal theory is the right one in both cases.

As a rule, at least, it would seem that it is due to ulceration through the appendix or intestine, causing in most cases a local peritonitis around the centre of ulceration. As pus is formed, it is shut off and encysted by lymph from the free peritoneal cavity, and gradually an abscess of greater or less size is formed, unless the opening in the gut is so large or the

septic matter escaping is so virulent that the peritoneum cannot defend itself, and general peritonitis is set up at once.

Once the abscess is encysted, the tendency of the peritoneum is to protect itself by forcing out the pus into the connective tissue or through the wall of the intestine, either through the original point of ulceration or a new one. This is precisely the same with pelvic abscesses around the Fallopian tubes, and in many cases Nature effects a cure and helps on the conservative argument; but he must be a small man who sits by and takes the credit of curing the case by letting the patient run three out of four chances of dying, instead of operating and giving at least nine out of ten chances to get well by establishing a free and safe outlet for the pus. When the peritonitis is local, the symptoms are, first, a severe colicky pain over the abdomen, in the first few hours usually most marked directly over the region of the appendix, and after the first twenty-four hours distinct tenderness will be localized in the same region. There may be vomiting, but as a rule the symptoms of intestinal obstruction are not present, or are only temporary in character. There are usually pretty well marked chills or chilly sensations, with some rise of temperature, usually not over 101° or 102° .

For several days, usually four or five, the symptoms will vary. The pulse may be at times not above normal, and the temperature may even sink to normal and the bowels move; yet the local pain, or at least pain on pressure, over the vermiform process remains, and may be the only indication of the presence of a pint of stinking septic pus which is liable at any moment to burst into the free peritoneal cavity and cause death in twenty-four hours. This condition was perfectly illustrated by my second case. Usually on the fifth, sixth, or seventh day the abscess will find an outlet or burst, and cause general peritonitis.

As a rule, if the case starts as one of general peritonitis, it will not end fatally in twenty-four or forty-eight hours, as is the rule when a large septic abscess bursts after five or six days of local peritonitis; but the colicky pains will be more intense and persistent than in local peritonitis, and the vomiting and constipation or intestinal obstruction will be persistent or readily provoked by attempts to feed, etc.

The patient may live four or five days, or even longer if kept quiet and under the influence of opium, but, unless operated upon before marked shock is present, will die with absolute certainty.

The following are short histories of the five cases of typhlitis and perforation that I have had to deal with. They fairly illustrate the most important points in local and general peritonitis starting from that locality.

I have operated upon more than two hundred cases, either during or while the patients were suffering from the results of local peritonitis starting from the Fallopian tubes or ovaries. In quite a number of these there was suppurative general peritonitis, and operation was done when pulse was 110 to 120 and temperature 103° to $104\frac{1}{2}^{\circ}$; but such cases with gynecologists are no longer rare, and the necessary steps of operating are now very generally accepted. But it is not so with local and general peritonitis starting from the vermiform or cecum, which are usually treated by physicians and operated upon by general surgeons. In several cases of salpingitis I have found the appendix adherent to the tube or ovary, and thrice I tied it off for hemorrhage when the adhesions were separated, and all of these recovered.

CASE I. *Intestinal Perforation ; Local Peritonitis ; Perityphlitic Abscess.*—Negro man, age 22. Was admitted to Bellevue Hospital August 24th, 1885. He was sent to the medical side as a case of peritonitis. In the absence of my colleague, I was asked to see the man. He said that for about a week he had great pain over the abdomen, with considerable fever, sweating, and chilly feeling. He had a temperature of $102\frac{1}{2}^{\circ}$, with a quick pulse and rapid respiration. His abdomen was distended, hard, and tense, and very sensitive to the touch, especially over the right iliac region, where he said now was the point of greatest pain. He had been constipated and vomited some, but his bowels moved with an enema. There were some but not positive signs of the presence of a tumor. I decided that there were indications of pus, and he should be operated on at once. Dr. Janeway and Dr. Stimson saw the case, but differed with me about the indications for operation. Later in the day the late Dr. McBride saw the man, and he agreed with me that there was pus. I had the patient etherized, and could then readily make out the presence of a tumor the size of a coconut near the crest of the right iliac bone, within half an inch of the bone. I made an incision about three inches

long. When the peritoneum was reached I dissected down near the bone so as to get somewhat under the side of the tumor, so as to be sure to open it where it was firmly adherent to the parietal peritoneum; for I wanted to prevent the escape of pus into the general cavity of the peritoneum. I found the muscle grayish in color, the change from the normal red color being due to slight infiltration from proximity to the inflamed tissues. I have since found this grayish color of the muscles to be a good guide in seeking a point where the sac of the tumor is adherent. With a pair of sharp-pointed forceps I carefully opened the sac of the abscess, and at once a strong spurt of fetid pus gushed out; at least a pint of dirty-colored pus with strong fecal odor escaped. The cavity was well washed with a solution of 1 to 3,000 bichloride of mercury, and a double drainage tube inserted. The patient's pulse fell to normal, and he made an uninterrupted recovery, and left the hospital in three weeks.

CASE II. Intestinal Perforation; Local Peritonitis; Perityphlitic Abscess.—Male, age 37, strong, vigorous man. While sitting in a saloon, had a violent, cramping pain of the abdomen come; he took some hot spiced drinks and was carried home. He suffered intense pain and sent for me the next day. His abdomen was distended and sensitive, and he had vomited some; the pain was most marked over the umbilicus. His temperature was 101°, and pulse 105, respiration 25. I gave him a hypodermatic of morphine, and ordered a laxative for the next morning. The next day the pain was less, but more decidedly painful over the right side; his temperature was only 100°, and he felt generally better after his bowels moved. The third day he had a chilly sensation, and temperature was 102°. I kept him in bed and on a milk diet. The fourth day he was better, but still had decided pain over the right iliac region, and was constipated. He was very fat, with not less than three inches of adipose tissue over the abdominal walls, and I could not make out a tumor, nor could I make out anything by rectal examination, but the pain and decided sensitiveness over the region of the cecum were such that I determined to call a consultation, and refused to call a medical man. Dr. L. A. Stimson was selected. He could not make out any tumor, but agreed with me that the patient should take ether, and if necessary have an incision made. He was ordered a dose of castor oil. On the morning of the fifth day his bowels moved freely and without trouble, his temperature and pulse were absolutely normal; but, as the local pain was still very marked, he was given ether. When fully relaxed, we could through all the fat make out indistinctly a tumor near the ilium. A free incision about three and one-half inches long was made, and when the

peritoneum was reached it was plain that we were in contact with a large, fluctuating mass. Selecting a point as far back as could be readily reached, I opened the peritoneum with sharp-pointed forceps, and out gushed a strong stream of stinking pus with a very decided fecal odor. The opening was enlarged and the abscess well washed out with 1 to 3,000 bichloride of mercury. There was no escape of feces or gas, and when my finger was in I could feel the walls of the abscess, but made out nothing of importance. A double drainage tube was inserted, and the upper end of the incision closed. The patient never had any rise of temperature or pulse, and in three weeks was sitting up. During the two weeks a nucleus of hard fecal matter, with ground-up seeds like those of strawberries, came out of the wound, and soon it closed from the bottom. There has never been any return of the trouble, but a decided hernia exists, and a truss is necessary to prevent its increase in size.

CASE III.—October 26th, 1888. This case was fully reported by Dr. A. M. Jacobus in the *Medical Record*, February 2d, 1889. Man, age 50, in good physical health, was taken with severe colicky pains on Saturday. On Monday the pains became very severe. On Tuesday he sent for Dr. Jacobus. The doctor found him lying with his knees drawn up, the abdomen tense and very sensitive to the touch, especially over the cecum; he was constipated. He was ordered to bed, and one-eighth grain of morphine and 8 grains antipyrin given every three hours as indicated. Saline laxative was given the next morning. Wednesday he was better, had a full stool, but was still in pain, especially on the right side; temperature $100\frac{1}{2}^{\circ}$. Thursday afternoon he grew worse, and the doctor detected some signs of a tumor over the region of the cecum, which confirmed his diagnosis of perityphilitis.

Friday, the fifth day, at 6:30 A.M., he was taken with violent cramping pains and rapidly developed all the symptoms of general peritonitis. At 9 A.M. he had a violent chill; the temperature went to 102° and pulse to 110. At 11:30 I saw him and decided to operate at once. The abdomen was exceedingly tense and very hard, but no signs of a tumor could be detected under ether. I opened the abdomen in the median line just below the umbilicus, and as soon as the peritoneum was opened, out gushed a quantity of purulent serum and flakes of lymph. Introducing my finger, I made out a collapsed abscess sac over the appendix vermiformis. I then made another opening through the abdominal wound directly over this point. I inserted a large-sized glass drainage tube attached to the tube of a large fountain syringe, and washed out the whole abdominal cavity. Introduced my hand and separated the adherent coils of intestines, and again washed out

the peritoneum. I found puddles of pus scattered among the coils of intestines, which even the second washing-out did not reach, and again went over the abdominal cavity with my hand, and again washed out till the water came away perfectly clear. The pus sac was freely opened, and the bean, which had ulcerated through the appendix, was found. As there was no escape of fecal matter or gas, the adhesions about the appendix were not disturbed. A glass drainage tube was inserted through both the median and lateral incisions, the latter going directly into the remains of the abscess sac. The wounds were closed with silk and dressed in the usual manner. In less than two hours the temperature fell to normal and the pulse to 90. The case was treated in the usual way—nothing by the mouth for thirty-six or forty-eight hours, warm rectal enemas for thirst. The drainage tubes were sucked dry every few hours. The central one was removed on third day, and the lateral on eighth day. The sixth day the sutures were removed, and while angry with his nurse the patient raised up on his elbow to drink a glass of water, and burst the median incision, the intestines escaping from under the dressings. They were carefully washed, returned, and in an hour I closed the wound with silk sutures, without ether. The temperature rose slightly, but a laxative brought it down, and he made an uninterrupted recovery and has been well since then.

CASE IV. *Intestinal Perforation of Cecum; General Septic Peritonitis.*—J. McG., age 28; good family history; strong and healthy; never had venereal disease; good habits; mechanic. February 5th he had some heavy lifting to do, but quit work at six o'clock, feeling all right; ate a simple supper. About 9 P.M. he had a very severe cramping pain, most marked over the right side of his abdomen; by 2 o'clock the pain was agonizing, and Dr. Ernest Walker, living next door, was sent for, who gave him hypodermatics of morphine, one-sixth grain, and one grain calomel by the mouth, until the pain was in a great measure relieved.

The next morning the whole abdomen was extremely sensitive to touch, and the abdominal walls as hard as boards, with some distention. The pain was very severe and decidedly more marked over the region of the umbilicus. During the day vomiting set in. More morphine was given and attempts made to move the bowels by enemas, but they were retained. Hot applications were made over the abdomen. Thursday the pain was still severe, and most sensitive over right side, and temperature up to 101° , pulse 110. Four Seidlitz an hour apart and an oxgall enema were given, but all of no avail. Some spinach-green vomiting. I saw the patient Thursday; his general condition was good, but all symptoms of general peri-

tonitis were well marked. I had him sent to Bellevue Hospital. Before operation, enemas were given, but were retained: rectal tube let off gas and gave some relief. Temperature was only 100.6°, pulse 106, but respirations were 30. Ether was given. As no signs of a tumor could be made out, I opened the abdomen in the median line just below the umbilicus. When the peritoneum was opened, abundant purulent serum poured out as soon as the adhesions of lymph were broken up with the finger. In passing the index finger over towards the cecum, the pus became more abundant and had a decidedly fecal odor. I could not make out any signs of a local abscess, or sac of one, but decided that the region of the cecum was the starting point of the peritonitis. I then made an incision through the abdominal wall just over the cecum. Through the median incision I introduced a large-sized glass drainage tube, which was attached to a large fountain syringe containing two gallons of water at 112°. I handled the tube so as to wash out all the excess of pus about the cecum. I then broke up all adhesions of the intestines in every part of the abdomen and pelvis, except about the cecum, and washed with six or eight gallons of hot water till it came out perfectly clean. By opening the lateral incision, the point of perforation in the cecum sealed over with lymph could be plainly seen; it was circular in shape, and about two-fifths of an inch in diameter. The appendix pointed upward, was somewhat adherent, but appeared nearly normal. A glass drainage tube was put in both openings, and the incisions closed around them in the usual manner with silk sutures, and the wound dressed with iodoform gauze, absorbent cotton, etc.

The operation lasted about one hour. There were no signs of shock at any time, and the patient's pulse was as good if not better after than before the operation.

He made an uninterrupted recovery; his temperature never above 101°, the pulse 104, and after the third day it was practically normal. Tympanites and pain had entirely left him. The glass drainage tube in the median line was removed the third day, but the other tube drained rather freely and had some fecal odor for several days. The edges of the wounds, especially the lateral one, sloughed and gaped on fifth and sixth days, when the stitches were removed. The discharge was irritating, and the peritoneum seemed, when assisted by drainage, to take better care of itself than the connective tissue and muscles. I have noticed this in all of my four cases of intestinal perforation. The sloughing incisions were marked in all of them, while in peritonitis from salpingitis it is exceedingly rare.

Thirty hours after operation a simple enema was given, and bowels moved freely without trouble. After this one small dose of morphine was given, and it was the only one after the

operation. After bowels moved, koumiss and pancreatized milk were given. On third day his bowels moved very freely, and the amount of food was increased. On account of the lateral incision closing as an open wound, he did not sit up till end of third week, but went out of the hospital perfectly well at the end of five weeks.

CASE V.—September 28th, 1889, I went to the northern part of New York State to see a woman, 48 years old, who had in the past ten days developed a tumor which was very painful on the right side just above the crest of the ilium. The history was the usual one of a slowly developing abscess about the vermiform appendix. Before I saw her, several ounces of pus had been drawn off with an aspirator. I could plainly make out a tumor the size of a large cocoanut. The tissues near the ilium were somewhat indurated. She was etherized, and I made an incision near the crest of the ilium, extending backward. When I reached the muscles they were grayish and infiltrated. It was evident that the sac of the abscess was firmly adherent to the lateral wall of the abdomen, and that I could safely open the abscess cavity without entering the peritoneal cavity; this I did, and out gushed about a quart of fetid pus. I inserted my finger, enlarged the opening, and put in a double rubber drainage tube. The tubes drained freely for several days and were then shortened, and in the fourth week the wound was healed and the patient well.

CONCLUSION.

When there are symptoms of local peritonitis, intense pain and tenderness, followed by tympanites and vomiting, with chilly sensations and rise of temperature, search should be made for the cause; as a rule, the pain will soon become localized over the region of the Fallopian tubes, the cecum or gall bladder, or some old ventral or inguinal hernia. If signs of a tumor or exudation can be definitely made out, and the general symptoms indicate the formation of pus, then the patient should be etherized and the pus reached by incision, the pus evacuated, the cavity washed out and drained. If it is in or involves the tubes and ovaries, the abdomen should be opened; and if the tube or tubes are occluded and pus found, they with the ovary or ovaries should be removed. If the abscess is around the appendix vermiformis or cecum, an incision should be made near the crest of the ilium, and the peritoneum dissected up till a place is reached where the peritoneum is

adherent to the tumor, which should then be carefully opened, the pus evacuated, the sac washed out, and drainage tube introduced, without opening into the free cavity of the peritoneum. If it is about the gall bladder—if the signs of pus can be made out—an incision over the sac should be made and the pus evacuated.

If the general symptoms are severe, and no localized centre of pus made out, then an incision should be made in the median line, and the peritoneal cavity explored with the index finger. If then a pus sac is found—if it be so situated that it can be reached by another lateral incision, and the pus evacuated without allowing the pus to escape into the free peritoneal cavity—it should be made and the median incision closed. If it cannot be reached by a lateral incision where the wall of the sac is adherent to the abdominal wall, then the pus should be drawn off from the sac by an aspirator or trocar, and the cavity washed out clean with an antiseptic solution before it is freely opened and a drainage tube inserted.

If signs of general peritonitis show themselves—that is, by vomiting, obstinate constipation, tympanites, etc.—then a free incision should be at once made in the median line and the starting point of the peritonitis found if possible. If it is over the cecum, an incision should be made over it and the pus washed out by means of hot water of temperature of 110° to 115° , run from a large fountain syringe, with a large-sized glass drainage tube attached to the rubber. After the free pus about the cecum is well washed out, several fingers or the whole hand should be put into the abdominal cavity and the intestinal adhesions broken up and all puddles of pus completely washed out. Then a glass drainage tube should be introduced into each opening and the wounds closed around them, etc.

In pelvic peritonitis, as a rule, the operation is not necessary to save life, but it may be, and is better to operate during the first attack if there are symptoms plainly indicating the formation of pus, for the adhesions are much more easily broken up, and more complete removal of the diseased organ can be done than after contraction and dense adhesions have formed, as they do after repeated attacks of inflammation. Besides, dangerous pelvic abscesses are avoided, and the bad influences of chronic invalidism are prevented. Of course, I refer to

severe cases of local peritonitis where there are symptoms, either subjective or objective, indicating beyond reasonable doubt the presence of pus.

In perityphlitis the operation should be done before the fourth day—the earlier the better—so as to prevent the chance of rupture and general septic peritonitis, which, as a rule, is attended by so much shock that no operation can do any good. As a rule, general peritonitis from rupture of a septic abscess is attended with more shock and rapid failure and death than peritonitis from direct perforation.

In all cases of general peritonitis an exploratory incision should be made as early as possible after trying to lessen the tympanites. If an exploratory operation does no good, it is not likely to add much to the danger.

There may be cases of idiopathic peritonitis, but I have never seen one proved by anything to be relied upon. Certainly, in septic peritonitis where shock is not too great, free opening, washing-out, and drainage will cure some cases. It helps if it does not cure tubercular peritonitis, and exploratory incision has proved to be, in the hands of experts, almost entirely free from danger, and it must become the practice in almost all cases of general and severe local peritonitis where there are marked symptoms of the formation of pus, an extension into a septic peritonitis, or intestinal obstruction. Many cases of local peritonitis due to salpingitis may never necessitate a laparotomy, for they often become encysted and give comparatively little trouble. Not infrequently the symptoms are due to a severe metritis, where the peritoneum covering the enlarged and inflamed uterus becomes so sensitive as to give in a marked degree almost all of the symptoms of a peritonitis due to salpingitis, and repeated attacks of this kind are often mistaken by good physicians for genuine cases of salpingitis. But I am referring here to cases where a distinct tumor can be felt in the broad ligaments, and accompanied by other symptoms indicating the formation of pus, which, when not operated on, rarely fails to cause a general peritonitis and kill or make the patient a confirmed invalid.

In typhlitis the diagnosis is, as a rule, comparatively easily made, and I believe it will soon become the general practice to operate early in all well-managed cases. Dr. McBurney's

paper on this subject will do much to advance and form the practice of early operation. What I wish to especially advocate to-night is early operation in cases of general peritonitis — both those starting from a local peritonitis and those due to the free escape of septic matter into the peritoneum—and to make it plain that, to succeed in such cases, it will not do to merely open the belly, allow pus to escape, put in a drainage tube or gauze, and leave intestinal adhesions causing obstruction to remain to kill even more certainly than septic poison, or fail to empty and wash out all puddles of septic fluid encysted among the coils of intestines; but we must make free incisions large enough to introduce the hand, and break up all adherent intestines, and freely wash the whole cavity of the peritoneum, and put in two or more drainage tubes. Without question, many cases where the patients are debilitated and weak before the starting of the peritonitis, and in those cases where the septic poison is too virulent to be successfully washed out, our patients will die in spite of an early operation; but are the chances of this class of cases getting well lessened by the operation? I think not. Death may be hastened, but that is all. But the majority, the large majority, of cases of general peritonitis taken early are not in this desperate condition, and yet, if not operated on, at least four out of five die. Probably many of you may think that the two cases of general peritonitis that I have just reported were mild cases, and some will think that they would have recovered had no operation been done; but recollect that one was operated upon only a few hours after the septic abscess had ruptured, and the other within seventy-two hours after the not so septic contents of his intestines had escaped into the peritoneal cavity. I did not wait till they were in a desperate condition, but they had every symptom of general peritonitis; and had you been present and seen in the cavity of the peritoneum, as I did, the amount of pus, and of lymph breaking down into pus, and the condition of the intestine, you would not doubt my statement. The second case had complete intestinal obstruction and the characteristic spinach-green vomit.

THE MEDICAL TREATMENT OF DYSMENORRHEA.¹

BY

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It is not the intention to discuss in this paper the subject of dysmenorrhea *in extenso*, but rather to give my own clinical experience in its medical treatment. I have chosen to thus limit it, first, because the whole subject is too vast for a single paper; second, because the brilliant achievements of surgery have caused a comparative neglect of the medical treatment of the diseases of women.

I have chosen to give mainly personal observations and impressions, because I believe such to be more valuable in our society discussions than arrays of statistics and many quotations from writers to whom we all have access.

Dysmenorrhea is a symptom associated with many pathological conditions; with such constitutional states as anemia, chlorosis, neurasthenia, etc.; with local conditions, such as versions, flexions, metritis, endometritis, perimetritis, diseases of tubes and ovaries.

The frequent existence of these diseased states without causing dysmenorrhea is proof that no one of them is the efficient cause of the suffering. An entirely satisfactory explanation of the direct cause is not to be expected until the subject of menstruation is more fully understood. Much work remains to be done in this whole field. The explanation which seems most in accord with clinical facts is that which is so well expressed by Dr. Wylie in his article on "Menstruation and its Disorders" in the "American System of Gynecology," vol. i. He believes that in the majority of instances the suffering is caused by a "hyperesthetic condition of the endometrium, especially at or near the os internum, often combined with more or less stenosis or induration at this point—stenosis due to degeneration, contraction, and atrophy, the

¹ Read before the Obstetrical Society of Cincinnati, October 10th, 1889.

result of imperfect development followed by disease ; or disease followed by induration, atrophy, and contraction. . . . The hyperesthesia may induce spasmodic contraction, which may cause the pain without the presence of any special induration or stenosis at or about the os internum" (page 421). The association of painful menstruation with perinterine diseases he would explain by the tendency of these latter to set up intra-uterine disease. This theory (or those substantially in accord with it) has for several years past been gradually supplanting the purely mechanical theory. It was fully set forth six years ago by our fellow-member, Dr. Palmer, in an able paper read before the eighth annual meeting of the American Gynecological Society (Trans. Am. Gyn. Soc., 1883, page 101). In the discussion, Drs. Chadwick and Fordyce Barker fully indorsed the views of the paper, and, as there were no opposing sentiments expressed, it was evidently in accord with the views of the eminent specialists present, as it is, I think, with those of nearly all prominent teachers of gynecology to-day. However, whatever theories we may accept, it is quite certain that the dysmenorrhea is not to be cured without the cure of these various pathological attendants. Since the cure of so many of these must be by surgical means, the number of cases amenable to medical means alone becomes a limited one. Yet it is by no means an unimportant one, for it will include the numerous cases of girls and young ladies in whom it is desirable to avoid local treatment and, if possible, local examination. In such it is justifiable to try first the effect of constitutional remedies, and in the majority of instances they will suffice. When they do not, after a reasonable trial, then of course examination should be made and dilatation or other measures indicated carried out. The persistence in medical measures in cases which need surgery is perhaps even more common among general practitioners than is the undue haste to resort to surgery among specialists, as much too common as that is. Possibly some of the failures to secure permanent success after dilatation or other surgical measures is due to the neglect to associate and follow up persistently such treatment with appropriate medical treatment. I shall report one such case further on. It is my opinion that proper medical treatment in early menstrual life would often save many women not

only years of suffering, but also final resort to surgical treatment involving more or less danger.

Remedial measures naturally divide themselves into those of relief and those of cure. Of the former, opiates occupy the first place in their power to relieve and in their power for ultimate evil. Once used, the danger of the opium habit is great. The bromides, chloral, tincture of cannabis indica, hyoseyamus, belladonna, are all valuable. In plethoric women with scanty flow I have often found the bromides, combined with belladonna or hyoseyamus, promptly effective in affording relief. Sometimes the pain may be arrested by beginning their administration a day or two preceding the flow. Cannabis indica I have found useful in certain spasmodic cases and cases with free flow.

Antipyrin is a valuable addition to our means of allaying pain, and will give temporary relief in a large majority of cases, whatever the diseased condition; but I have not been able to observe any curative effect. Caution should be exercised in its administration, since in too large doses dangerous symptoms may arise, and especially in anemic women. Dr. Palmer speaks highly of concentrated tincture of cimicifuga and of tincture of pulsatilla. Dr. Mundé also recommends pulsatilla in the neuralgic form. Dr. M. L. Chambers reports in *Medical Record*, July 7th, 1888, prompt relief in dysmenorrhea, in fleshy, robust women with scanty discharge, from six-grain doses of oxalate of cerium given hourly. I have had no favorable opportunity to try this remedy. In two or three hospital cases, in women who suffered from well-defined pelvic disease, it seemed to have no effect. The physician may very wisely give his patient (and especially the anxious mothers) a warning against overdosing and oversoaking. Rest in bed, the application of dry or moist heat, an occasional hot sitz bath, the moderate drinking of hot fluids, are domestic measures which will afford a certain amount of relief. The dosing with gin or whiskey, with tansy teas, etc., should be discouraged. With cannabis indica (in cases in which the flow is free), belladonna, hyoseyamus (in spasmodic cases), antipyrin, possibly oxalate of cerium, pulsatilla, etc., we have a list of remedies for relief which are safe and usually effective for the time.

Bromides in congestive cases, used occasionally or for short periods of time, may be valuable, but their prolonged administration disorders the stomach and favors anemia. Chloral should be used with circumspection on account of the liability to the establishment of the chloral habit.

So far I have almost ignored the classification of cases. That of Dr. Thomas, as neuralgic, congestive, or inflammatory, obstructive, membranous, and ovarian, has been very generally accepted; and although it is true, as Dr. Wylie states in the work above referred to, that the distinction can often not be made clinically, for convenience of study we are not yet ready to abandon it. Curatively medical measures will apply mostly to the first of these, and to some of the mildest of the second and fifth divisions. The neuralgic variety Dr. Thomas defines as that which "depends upon no appreciable organic disorder of the uterus or its appendages, but merely upon a peculiar state of the nerves, which, under the stimulating influence of congestion, produces pain" ("Diseases of Women," fifth edition, page 609). Other authors indicate the same class of cases by the term "functional." We do see many cases in which no marked uterine or pelvic disease is detected, but the characteristic pain at the os internum upon the passage of the sound, with some degree of endometritis, is usually present. Dr. Robt. Bell, of Glasgow, found endometritis present in most of one thousand cases of dysmenorrhea examined by him (*Brit. Gynec. Jour.*, 1886).

Foremost among curative agents stands general hygienic treatment. Dr. Emmet may go to an extreme in his view of the nervous origin of dysmenorrhea, but no one can observe many cases without being forcibly struck with the prominence of the neurotic element; and to the removal of this element the treatment must often be particularly addressed. Nutrition, exercise, healthful mental and moral surroundings, must be at the basis of successful treatment. The following case will illustrate the influence of these elements: Mrs. E. S., æt. 27 years, married five years, sterile. Three years ago suffered very severely from inflammatory rheumatism; was confined many months to her room, and unable to take much exercise for many months more. In May, 1889, came under treatment for dysmenorrhea; now well of her rheumatism; no

heart murmur; general nutrition fairly good; has suffered at her menstrual periods more or less since the rheumatic attack. Dysmenorrhea has of late grown much worse; suffers intensely during first day of flow, and much during the whole time; has almost constant backache, leucorrhea, pain and tenderness in ovarian regions; is very nervous; has been subjected to unusual household cares and the nursing of an invalid. Vaginal examination: The uterus in place, tender to touch; cervix conical; excessive tenderness in lateral vaginal cul-de-sacs. Treated, under same domestic circumstances, two months by tonics, manganese, binocide, electricity, tamponnement, with no appreciable benefit. She then spent several weeks visiting in the North, taking no medicine. She gained several pounds in weight; lost backache, sideache, most of the leucorrhea, and menstruated once while away, with no pain. Returned to nearly same domestic circumstances. At her first period afterward, suffered again severely.

Young girls coming under treatment must have special attention to all hygienic conditions: diet, dress, bathing, rest, exercise. All undue drains upon the vital powers—as close confinement in school, at music or art lessons, late hours and the dissipations of society—must be interdicted. Often school work must be entirely forbidden for the time. Local treatment is not needed, in fact makes matters worse in the majority of cases. (Yet who of us has not seen such subjected to it, and even wearing a pessary to correct the normal anteversion of the uterus!) The trouble in these cases is a lack of development of the uterine system. The demands of modern education have kept the nutritive demands of the brain so active that there has not been sufficient to complete the growth of the generative organs. The demands of society have kept the girl in confinement when she should have been developing muscular vigor by exercise in the open air. She now comes to perform an *adult* function with an *infantile* organ, and the effort is imperfect and painful. This organ must now have a chance to “catch up.” Given this chance fairly and fully, it will probably do so; if not, pain and invalidism are the probable future lot of the possessor.

Cases which are very neurasthenic or in which the nutrition is very poor are often best treated at the start by a course of

"rest cure," with milk diet, massage, and electricity, followed up later by an abundance of outdoor exercise. In my service in Dr. Reamy's Private Hospital for Women, I have seen some most excellent results from this plan of treatment. Next in importance stand tonics, of which iron takes first rank because of the usual association of anemia and scanty flow. In cases in which the flow is not scanty, arsenic is often of more service. Electricity, general and local, is a valuable adjunct. Of drugs which are supposed to have a specific influence, but few have maintained a place in general usage. I shall speak of but two—apiol and the salts of manganese, both of which I believe do have some specific action upon the utero-ovarian system. Apiol is "a stimulant to the uterine system" (Bartholow, "Materia Medica"). I have found it useful in some cases, combined with appropriate general treatment. Failing in my efforts, some time ago, to secure good effects from American preparations, I have since used the "Pujol" capsules. From manganese I have had better results than from any other one remedy. As easier to take and far less irritating to the stomach, I prefer the binoxide, and believe it quite as efficacious as, if not more so than, the permanganate. It probably acts both as a uterine and a general tonic. Bartholow calls attention to the normal association of iron and manganese in the tissues of the body, and believes that the effect of iron is increased by the addition of manganese. In all anemic cases I have associated iron with it, usually in the form of Bland's pills. I have not been able to decide, in the case of either apiol or manganese, exactly the kinds of cases to which they are especially adapted, except that they are those in which marked organic disease is not to be detected.

I have selected from my note books a few cases as examples of both the success and failure of these two drugs. The successes are perhaps not numerous enough to warrant great enthusiasm in their commendation, but, I believe, sufficient to show that they may be useful as one of the means of treatment. To expect a "specific" for dysmenorrhea would be as rational as to look for a "specific" for dropsy.

CASE I.—Miss F. E., *et.* 31 years, Irish, servant. (Consulted me, January 3d, 1887, on account of a severe burn on the hand. Inquiry developed the fact that she had received the burn by

falling against a stove in an epileptic attack. It was also developed that she had an epileptic fit at each menstrual period, and has a very few times had such attacks in the intervals. Menstruation had always been scanty, but without special trouble until she was 20 years of age, when she had a tooth drawn just before the time for a period, and had a profuse hemorrhage from the socket of the drawn tooth. She was left extremely anemic. The expected flow did not appear, and since that time menstruation has been irregular, scanty, extremely painful, and accompanied by an epileptiform seizure, usually the first day. She falls suddenly, with a low groan, hands clinched, tongue bitten; there is a little frothing at the mouth, and coma follows. Close inquiry of herself and brother failed to elicit any cases of epilepsy or other neurosis in the family. She had had no such attacks prior to the hemorrhage at the time the tooth was drawn. She was, at the time of this visit, somewhat anemic, but not extremely so. She had been treated by many physicians, with iron and other tonics; some years ago had been treated by Dr. Reamy, who had made the operation of dilatation of the cervix, with considerable relief for a time. Being a hospital case, she had been lost sight of, and hence the surgical treatment was not followed up by sufficient medical treatment. She had spent some time in the Ohio Hospital for Women and Children. She was now so hopeless of relief that she did not even mention the dysmenorrhea until questioned. Otherwise her health was good, and she was able to work during the interval; but her attacks made it difficult for her to keep a situation. She was given McK. & R. pil. manganes. binox. gr. ii., one three times a day, a few days after the menstruation in January. She reported the February period less painful, but had the epileptic attack. The second month there was no fit and the pain was not severe. Since then the periods have been regular within a few days; almost painless, except on one or two occasions when she has been exposed to cold and wet at the time; the flow has been moderate in amount, lasting two or three days. She has had but one epileptic attack since February, 1887, and that was after having two teeth drawn, and before she left the dentist's chair. There was no unusual hemorrhage, and she soon recovered from the nervous shock. The manganese was taken continuously for five months, both during the period and the interval. There was no perceptible effect from its use, save the relief from the suffering, freedom from the fits, increase in the menstrual flow, and improvement in general health. No other medicine was given, except an occasional laxative, and bromide of potash for a short time at the beginning of treatment. She has instruction to take the pills again if she begins to suffer. No vaginal examination was made.

CASE II.—Miss G., American, æt. 26 years, brunette, tall and slender; delicate from childhood. Menstruation began at 13 years of age, and has always been painful; the first day, and often the whole period, being spent in bed. She has always been pale and anemic, and frequently subjected to courses of iron and other tonics, with temporary improvement in general health and some amelioration of the dysmenorrhea. October 7th, 1887, she was ordered McK. & R. pil. manganes. binox. gr. ii. three times a day, to be taken continuously for three or more months. In two months she reported great relief from suffering and marked improvement in general health. This improvement continued for the seven months she was under observation, but how long she took the remedy I am not able to state.

CASE III.—March 1st, 1888, Miss M. B., American, æt. 15 years, brunette, of phlegmatic temperament. Menstruated first at age of 12 years—irregular, but not painful at first. For a year and a half past has been regular, but has had severe pain at each period, with bearing-down pains and pain in left ovarian region; the latter persists also during the interval. She has also a smarting, burning pain upon urination. She was given an application of the galvanic current, ten to twenty cells, twice a week, negative electrode over lumbar region and positive over the ovaries; careful diet and strict hygienic rules were laid down. The electric current gave prompt relief to the ovarian pain. The next period was less painful, but at the second she caught cold and suffered extremely. The electricity was continued twice a week, and she was also put on the binoxide-of-manganese pills.

May 14th.—Electricity is still continued; she has taken the pills very irregularly, and not at all for two weeks. Discontinued them. She says she feels like a different girl. Menstruation is painless, the pain in the side is but slight, and general health is much improved. Galvanism so completely relieved the symptoms that, in view of her youth, I made no vaginal examination.

CASE IV. was an almost typical case of *chlorosis*. When she first came under my observation, eighteen months ago, she was 19 years of age; she had been healthy up to four or five years previous. Menstruation occurred at 14 years of age. It had always been irregular, scanty, and painful. She was unable to endure exertion; suffered often from severe headache; neuralgia in various regions. The pale face and blanched lips told plainly the want of red corpuscles. The face and extremities were slightly edematous; the urine was at times scanty and again abundant, averaging almost the

normal quantity; it was free from albumin and tube casts. Heart, lungs, and abdominal organs normal. As the bowels were habitually constipated, she was ordered a morning draught containing magnes. sulph., ac. sulph. dil., ferri sulph. Three of Bland's pills and one pill of manganes. binox. gr. ii. were to be taken after each meal. In addition, a simple nutritious diet, the morning sponge bath, and exercise in the open air were ordered. Improvement in general health was marked in two weeks. Gradually the precordial distress, nerveaches, headaches, and backaches disappeared, and the appetite became good. The suffering at the next month was less, and quite relieved after two or three months. For the past year menstruation has been regular and painless, except on a few occasions when she has taken cold at or about the period. It may be queried if the whole result in this case should not be credited to the iron. It seemed to me that the tonic effects of the iron were in this case much more quickly manifested than in those in which I have given it alone; and it certainly has never been my experience to see dysmenorrhea in anemic subjects so quickly and thoroughly relieved by iron alone.

CASE V.—Miss A. W., æt. 24 years; healthy. Menstruated first at 15 years of age, without pain until the last four or five years. Menstruation now is regular in time, lasts three or four days, and is accompanied by severe pain on the first day, generally requiring a day's rest in bed. Put upon two-grain doses of binoxide of manganese in July, 1889. The period in August was accompanied by less suffering than usual, and the one in September was almost painless. She is instructed to continue the remedy.

CASE VI.—Mary C., Irish, servant, æt. 28 years. Is of a robust constitution, and has always been healthy, except severe dysmenorrhea, from which she has suffered since puberty, and an attack of diphtheria of great severity in March last. Menstruation has always been irregular, scanty, usually lasting but one day. For this day she has nearly always been obliged to keep her bed, and frequently has been incapacitated for her work for several days preceding the flow. She suffers most intense headaches at the period.

July 20th, 1888, she was ordered "Chappelear's syr. hypophos. co. with iron," 3 i. after each meal, and Pujol capsules of apiol, one three times a day, beginning nine days before the expected time of the next period.

September 26th she reported that she had not had a headache since the last visit. She menstruated on August 19th and again on September 9th without any pain; flow lasted each time one day and a night. She continued to take the apiol,

for a few days preceding the flow, for two or three months, and has since suffered but little.

CASE VII.—Miss G. S., æt. 16 years, tall and slender, having grown rapidly during last two years; general health good, not anemic; not working hard in school; suffers very severely first day. Regular. Ordered out-of-door exercise, regulated diet, and binocide of manganese, gr. ii. t. i. d. Was relieved the first month. Continued the remedy two months, and has since (nine months) menstruated without pain.

CASE VIII.—Miss L. H., March 15th, 1887, æt. 16 years. Menstruation began at 13 years; not painful at first, but became so after a year. Now suffers first day cramping pains, with pelvic pains at menstrual periods. Flow free, duration four days; regular. She is tall, slender, not anemic; subject to headaches; of strumous diathesis. Family history of phthisis. School work limited, nourishing diet, early hours, and binocide of manganese. There was no relief after two or three months' trial. She then spent a summer (1887) at the seashore; returned with general health greatly improved and dysmenorrhea less severe. She was ordered capsules of apiol, one four times a day, beginning three or four days before the expected flow, and continued during the first day. She was greatly relieved; continued the remedy in same way for four months, and has since menstruated regularly with very little suffering.

THE BEST OPERATION FOR CYSTOCELE AND RECTOCELE.

BY
PAUL F. MUNDÉ.

(With one colored plate.)

I HAVE designated the two operations about to be described, and illustrated in the accompanying colored plate taken from nature, as the "best," because, in my experience, they not only are technically the simplest and easiest, but also produce the most perfect and permanent results of any of the various operations for cystocele and rectocele which I have performed; and I can say that I have given all those which seemed plausible a fair trial.

To begin with the *operations for cystocele*, I have found

that the oval, elliptical, horseshoe, and other longitudinal methods of denudation are all open to the same objection, namely, that sooner or later, mostly sooner, the *long* cicatrix separates under the steady, uniform downward pressure of the bladder, and the cystocele returns in quite as marked, if not more marked degree than before the operation. For this reason, years ago I abandoned these methods, and adopted the one which theoretically seemed to offer the best chances, and which I shall now describe. It first came to my notice many years ago in a French journal, where it was credited to Prof. Stoltz, of Nancy. I soon had occasion to give it a trial, and was so much pleased with the result that I have since employed it in all cases of cystocele which seemed to me to call for operative cure. I may say here that I consider the large majority of cases of cystocele perfectly manageable (not *curable*, be it understood) by means of the Gehrung pessary, which, in my opinion, is the best of all supporters for this condition. Only where the cystocele is very large, and especially where it is combined with a rectocele which requires operation, do I think it advisable to operate on the cystocele. In cases of prolapsus uteri where the vaginal prolapse is limited mostly to the anterior wall, I usually find the Gehrung pessary quite equal to the task of keeping up the anterior vaginal wall and the uterus.

The special advantages of Stoltz's operation are that the relaxed and redundant anterior vaginal wall is contracted in such a manner that all the pressure is exerted on a circular cicatrix, which is much less likely to yield and allow a return of the prolapse than a longitudinal scar. Besides, the single, circular suture, tied in one knot just below the meatus urinaris, can be removed with ease without interfering in the least with any operation on the cervix or the posterior vaginal wall or perineum which may be deemed necessary, and therefore all these operations can be performed at the same sitting, and the tedious delay, indispensable when numerous sutures have been used in the cystocele operation, before the new perineum permits of their removal, can be avoided. It is easy of execution, simple, and perfectly certain in its results.

The method is, briefly, as follows: A circular denudation

of the protruding anterior vaginal wall is made with scissors or knife (I prefer scissors), the size of the denudation varying with the degree of the cystocele. A stout silk ligature, armed at either end with a straight or slightly curved needle, is then passed from the point nearest the cervix in the median line slightly outside of the line of denudation, up on one side, the needle entering and emerging so as to include all the tissue, but not being kept concealed all the time, until the median line about half an inch below the meatus urinarius is reached, when the point of the needle is made to emerge slightly towards the opposite side. The other needle is then passed around in precisely the same manner, and the two ends of the ligature are crossed below the meatus urinarius (Fig. 1). Having thoroughly irrigated the denuded surface with a 1:5,000 solution of corrosive sublimate, the centre of the denudation is pressed into the bladder with a sound, and held there while the ligature is securely and firmly tied, the sound being removed as the knot is closed. The prolapsed anterior vaginal wall, with adjacent bladder wall, is thus pushed upward into the bladder, and the wounded surfaces are securely approximated. The ends of this circular ligature are attached to one thigh by adhesive plaster, and allowed to remain undisturbed until removal after eight or ten days, or until the ligature cuts through. The bladder is emptied by catheter every four hours, so as to prevent undue distention of that organ. Very little pain follows this operation, and I have never known the bladder to react unpleasantly after it.

Recently, in a case of vesico-vaginal fistula with large cystocele, I performed this operation, trimming out the fistula very carefully, and then turning the denuded fistulous track into the bladder, and cured both the fistula and the cystocele in one operation. When the time to remove the suture arrives, it is but necessary to cut the loop just below the bulbous urethra and remove it.

In no instance have I seen the cystocele return after this operation.

No better description of the suture can be given than to compare it to the string which is run around an ordinary tobacco pouch.

Of the *operations for rectocele* I can fairly say that for

years I employed the method described by Emmet and Thomas, in which the redundant and prolapsed posterior vaginal wall was included in the perineal sutures and made to form a part of the newly formed perineal body.

My success with this operation was so good that I unhesitatingly indorsed it. But it had a great disadvantage in that it tended to shorten the posterior vaginal wall, and thereby drew down the already usually more or less prolapsed uterus. This feature had long been an objection in my mind to this method. But I, for the time, knew no better. The new bilateral semilunar method devised by Emmet certainly obviated this objection, and is an excellent operation for rectocele. But it leaves the perineum (in my opinion) in *statu quo*, and the vulvar opening remains as gaping as before. Hence I soon gave it up.¹ When in Europe in 1886, I chanced to see Prof. Hegar's assistant, Dr. Wiedow, do the operation of his chief for rectocele. He used wire interrupted sutures. The narrowing of the posterior vaginal wall and the restoration of the perineum were so admirable that I was quite enchanted, and at once on my return put the operation on trial. I could see no use in the interrupted wire stitches, which were difficult of removal and required a long delay before they could be safely reached. I concluded to substitute catgut, and, after first employing interrupted sutures of that material, have now for a long time used the running suture, looping each stitch and drawing it tight as I went along. I have used the thickest catgut I could pass through the eye of a straight or slightly curved needle, and continued with this suture until the denudation of the posterior vaginal wall is closed nearly to the perineum. Tightly looping the catgut, I then employ silk-worm-gut as stay sutures, passing them with a long straight or slightly curved needle from the margin of the skin deep under the wound, and tying them on the skin of the new perineum.

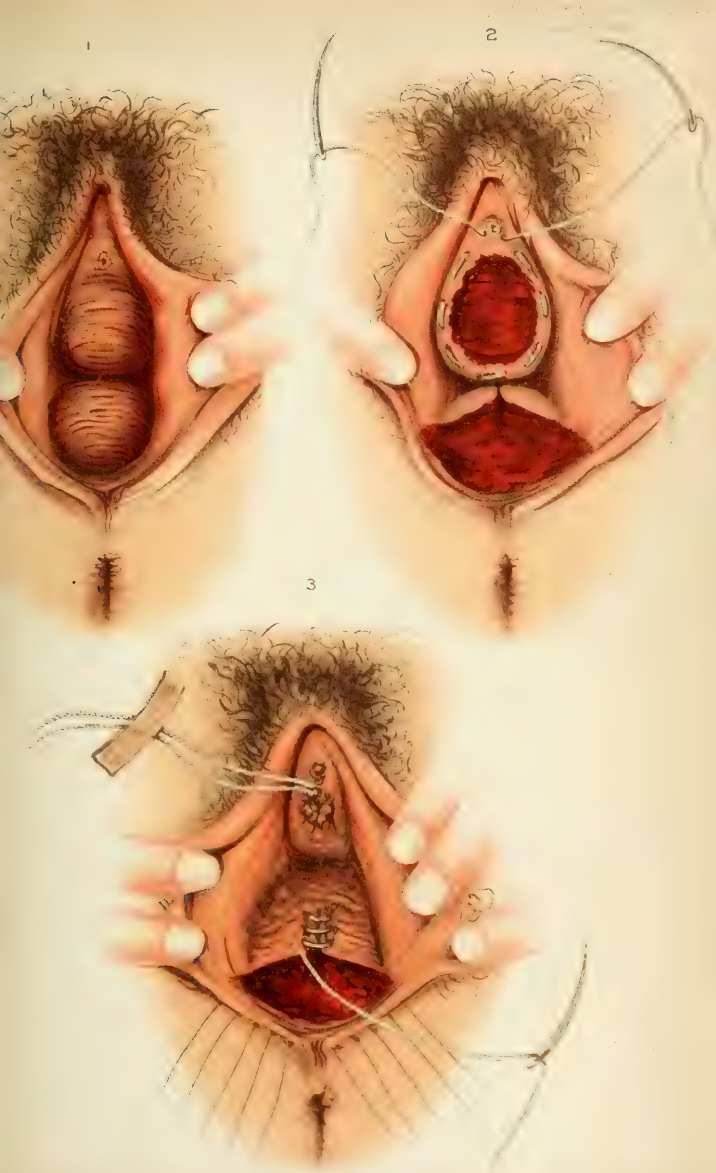
The form and method of denudation are as follows: Catching up the most prominent point of the rectocele with a tenaculum, I snip out a small piece of mucous membrane to show the height and length of the denudation. This part is held up by a tenaculum in the hand of an assistant. Then I select,

¹ For descriptions of all these operations, see my "Minor Surgical Gynecology," second edition, 1885.

on either labium, the point where I view the posterior commissure to be. This always corresponds to the beginning of the perineal rent, as is easily seen by the cicatricial tissue. Having secured perfect uniformity of surfaces by the hands of my assistants (of whom, as in the cystocele operation, there must be one supporting each leg), I begin on the left labium, and, with scissors curved to the left, trim off a thin strip of mucous membrane to the point where the tenaculum is inserted; passing down to the right side, I cut off the strip on a level with the incision on the left. Returning to the left labium, I repeat this procedure, and thus gradually denude the whole of the triangle marked out (see Fig. 2.) The final step of denudation is to pare off the edges of skin, so as to insure smooth coaptation of the raw surfaces and a clean line of cutaneous union. It is important that equal and even separation of the labia be maintained by the assistants, so that the denudation may be of the same height on both sides. Hemorrhage may be quite free, and occasionally a small artery may require torsion or ligation with catgut. But I have never seen any serious bleeding, or found the patient the worse for the loss of blood during this operation. During the paring and stitching the wound should be frequently irrigated with a tepid 1 to 5,000 solution of corrosive sublimate.

As soon as the denudation is completed, the introduction of the already described catgut suture is begun; the first suture being knotted, and the end left long as a guide by which one of the assistants lifts up the rectocele and renders it easily accessible to the operator. Care is taken to coaptate the edges of the wound accurately, and each suture is securely looped before the next one is taken. As soon as the edge of the posterior commissure is reached the catgut suture is abandoned, after being well secured by double looping, and a number of silk-worm-gut sutures, varying from four to six according to the height it is desired to make the new perineum, are inserted from the skin, a long straight or slightly curved needle being used, and the points of entrance and exit being just outside of the border of the wound. The sutures are carried entirely under the surface, to avoid possible pocketing of pus in the depth of the wound.

When these last sutures are tied, the perineum will be



STOLTZ'S OPERATION FOR CYSTOCELE. | MUNDÉ.

found to have been entirely restored. Their chief object is to act as stays in case the catgut should give way before firm union is achieved. The catgut, of course, need not be touched, as it is absorbed in from ten to fourteen days. The silkworm-gut sutures should be removed in from seven to ten days: sooner, wholly or in part, if edema or suppuration occurs.

The wound is kept lightly covered with a thin dressing of sublimate gauze (1 to 5,000). The urine is carefully drawn at first, but after a few days it may be passed voluntarily, if the patient is able, an external and perhaps vaginal irrigation with one per cent carbolic acid solution being made immediately after.

The patient's limbs are loosely tied together, and she is encouraged to turn on her side frequently, so as to relieve tension on the perineal tissues.

Union after this operation is almost certain if proper anti-septic precautions are taken, and if the parts are not handled too much during convalescence by awkward syringing or meddlesome inspection. Cleanliness is, of course, imperative. The bowels can be moved after the third day by laxative or enema. It is, of course, assumed that they were thoroughly emptied before the operation.

At the end of the second week the patient may be allowed to sit up, and thereafter gradually go about her daily duties. Sexual intercourse should be prohibited for at least three months, and the recurrence of pregnancy avoided for at least a year.

The desire to avoid bleeding as much as possible during this operation induced Jenks, of Detroit, to recommend the subcutaneous (or rather the submucous) detachment of the whole flap by sharp-pointed scissors inserted in the median line at the posterior commissure, and the removal of the flap in one piece. I have tried this method only once, and found that, while certainly there was no bleeding while the flap was being separated by the buried scissors, there was the more when the flap was cut off. The wound was so deep, indeed, and so many large vessels, both veins and arteries, were injured, that numerous ligatures were required. And the sutures cut through the brittle tissues of the recto-vaginal septum, and allowed pockets to form in which suppuration

took place, necessitating a free opening of the wound within a week after the operation, and entailing a tedious recovery and an imperfect result. I do not think, for these reasons, that I shall employ this method again.

The so-called "flap-splitting" operation for lacerated perineum (see this JOURNAL, July, 1889) is not applicable to cases of rectocele, unless the separate operation of narrowing the posterior vaginal wall is performed first; and then I think, unless there is a complete rupture of the perineum, the Hegar operation is much to be preferred.

The time usually occupied by these two operations need not exceed one hour, although he would be an unusually quick operator who could do them both in much less time.

I have chosen silkworm gut for the perineal stay sutures because it is less painful than wire and less liable to cause suppuration than silk: still, I have had several very good results with thoroughly aseptic silk.

In several instances I have in one sitting done first a trachelorrhaphy, then an Alexander's, third a cystocele, and fourth and last a rectocele, as here described, all within an hour and a half, and all with perfect success. But some patients will not bear so long an anesthesia, and hence we will often be obliged to perform so large a combination of operations in two sittings.

SHOULDER PRESENTATIONS AND THEIR MANAGEMENT.

BY

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THE fetus as it floats in the amniotic fluid usually has its thighs flexed upon the abdomen, and the legs upon the thighs; the arms lie alongside the thorax, with the forearms flexed upon the arms and the wrists bent in such manner that the palms of the hands face the lower jaw; the trunk curves forward and the head droops so that the chin or face lies between the palms. In this manner it forms a compact oval package,

corresponding in contour to its encompassing muscular tement. In the vast majority of cases the larger and heavier end of this egg-shaped package—the end containing the head of the fetus—is dependent and presents at the uterine orifice. Unfortunately, however, this does not always pertain, and in exceptional cases, when the pregnant woman comes to the parturient couch, any portion of the fetus or its appendages may be the presenting part. I say “unfortunately” advisedly, inasmuch as with each and all of these abnormal presentations there are added to the ordinary and inherent dangers of childbirth—and they are by no means inconsiderable—many and great hazards to both mother and child.

In this communication I shall limit my remarks to those cross-presentations in which the shoulder is the part of the fetus presenting at the uterine outlet, and shall present, in the main, my individual experience and conclusions.

When the head or breech does not offer at the os uteri, this is the presentation oftenest encountered. Fortunately it is of rare occurrence, as shown in the following table :

TABLE SHOWING PROPORTION OF SHOULDER PRESENTATIONS TO OTHER FORMS IN LABOR.

Authority.	Cases of labor.	Cases of shoulder presentations.	Percent.
Churchill (Treatise on Midwifery).	112,140	484	0.43
Cincinnati Hospital in 1888 (Report for 1888).	234		0.00
Cook (Trans. Indiana State Med. Soc., 1888, p. 47) . . .	800	8	1.00
Corson (Jour. Am. Med. Asso., July 31st, 1886, p. 138)	3,036	5	0.16
Crampton (N. Y. Med. Gaz., Oct. 28th, 1882, p. 506) . .	500	1	0.20
Cross (London Lancet, N. Y. edit., 1860, vol. ii., p. 528)	4,733	30	0.63
Ingalls (Bost. Med. and Surg. Jour., April 26th, 1877, p. 485).	2,000	1	0.05
Kemper (Trans. Ind. State Med. Soc., 1889, p. 128) . . .	900	3	0.33
Price (Jour. Am. Med. Asso., May 19th, 1888, p. 629) .	859	3	0.34
Richardson (Cin. Lancet and Observer, Oct., '62, p. 588)	1,000	1	0.10
Rooker (Trans. Indiana State Med. Soc., 1889, p. 121)	2,200	1	0.04
Smart (London Lancet, N. Y. edit., 1860, vol. ii., p. 529)	5,026	26	0.51
Savage (London Lancet, February 22d, 1873).	1,437	4	0.28
Smith (London Lancet, N. Y. edit., 1860, vol. i., p. 33)	1,300	1	.07
Whitcomb (Jour. Am. Med. Asso., Feb. 5th, '87, p. 156)	616	2	0.30
Winsor (Bos. Med. and Surg. Jour., July 12th, '77, p. 33)	385	3	0.78
Author.	376	9	2.40
Total	137,542	582	0.42

Thus we see that of 137,542 cases of labor, 582 were complicated by presentation of the shoulder. This is 0.42 per cent. or once in 234.5 labors. Cazeaux¹ says that Bland observed trunk presentations in the proportion of 1 to 210 labors; Clark 1 to 212; Collins 1 to 416; Dubois 1 to 168; Lachapelle 1 to 220; Merriman 1 to 265; and Nagele 1 to 180.

Various theories have been advanced in explanation of the occurrence of this presentation. Thus it may be due to disproportionate lightness of the head, as, *e.g.*, in the case of acephalic or hydrocephalic monsters.

CASE I.—Mrs. S., age 20, of German parentage, well formed and healthy, was taken in labor with her first child on January 29th, 1882, under the care of a midwife. The pains were slight and irregular, and frequently ceased for several hours. After the fourth day the pains became stronger and more frequent, and recurred at regular intervals. A physician was in attendance on the fifth and sixth days, but during the night he suddenly abandoned the case, and I was called at 4 A.M. of the seventh day. I found the patient in a state of frantic excitement and alarm, with a flushed countenance and rapid pulse. With all this, however, she was not so much exhausted as the long duration of labor would lead one to anticipate, and she was free from fever. This comparatively favorable condition was probably due to the fact that the amniotic sac was as yet intact. The pains were powerful; the vagina was moist; the os uteri was fully dilated, and the bag of waters presented at the vulva with every contraction. The pelvis seemed of normal capacity and symmetrical contour. The presenting part of the fetus could not be recognized by the finger, but upon introducing the right hand into the vagina it was discovered to be the right shoulder and arm, with the head in the left iliac fossa and the back looking forward. Without removing my hand, the patient was placed in a somewhat more advantageous position, the tough and resisting membranes were ruptured with some difficulty, and the hand was passed along the anterior surface of the child until a foot, which proved to be the right, was encountered and easily brought down. Traction and external manipulation during the next interval between the pains readily effected version, and with another contraction the breech was brought to the vulva, and with two more pains the fetus was delivered. The child, a female, was acephalous, although otherwise well developed, breathed for a half-hour, and expired. The placenta was expelled spontaneously in a

¹ "Treatise on Midwifery," Philadelphia, 1873, page 362.

few minutes. The lying-in was normal in every respect. This lady has not since become pregnant.

Although the head, in the case of hydrocephalic monstrosities, may be absolutely much larger and heavier than when normal, yet the specific gravity of the cranial contents is diminished and is below that of the tissues of the trunk. For this reason hydrocephalous may be classed with the acephalous state as one of the fetal conditions predisposing to cross-presentations.

CASE II.—Mrs. R., age 24, American, well developed and healthy, was taken in labor with her first child August 31st, 1889. During the early morning and throughout the day the pains were irregular and weak, but during the following night they became more regular and stronger. I was called at 4 A.M., September 1st, and on examination found a pelvis of ample capacity, the os uteri dilated to the size of a silver dollar, the amniotic sac unruptured, with a shoulder, hand, and a loop of the umbilical cord presenting. Investigation revealed the fact that the shoulder and hand were of the left side, with the head of the fetus in the right iliac fossa and the back toward the mother's front. Two hours later, with the os having a diameter of two inches and dilatable, the patient was placed in the genu-pectoral position, and I proceeded to rectify the malposition of the fetus. Introducing the left hand into the vagina, the membranes were ruptured and pressure made upon the presenting shoulder, in a direction upward and to the left, meanwhile making pressure upon the head externally, with the intention of bringing the head to the pelvic inlet. This, however, was found to be difficult or impracticable, and the direction of the force was changed toward the opposite side, whereupon version was readily effected, the breech becoming engaged with the next pain. Unfortunately the left hand was found to be also presenting. The patient was placed in Sims' position, and no difficulty was encountered in carrying the arm above the pelvis of the child, where it remained. The patient was at once placed upon her back and the labor pursued its course. During the day the pains were weak and infrequent, and the patient obtained considerable much-needed sleep. At 3 P.M. the pains began to recur more frequently and forcibly, and soon became very strong and expulsive in character; yet the presenting part advanced very slowly, and the fetus was not delivered until 5 o'clock. The placenta was delivered by traction and compression during a pain a few minutes later. The child, a female, was hydrocephalic, no union having taken place between the cranial bones; had a

large bifurcation in the lumbar region of the spine; both feet were in a state of equino-varus, and there was ankylosis of both hip and both knee joints. It gave a few gasps and expired. The lying-in was normal and the patient made a good recovery.

Other conditions and phenomena pertaining to the fetus have been brought forward in explanation of the occurrence of cross-presentations, as, *e.g.*, the presence of twins, smallness and excessive mobility of the child, etc. In premature delivery before the eighth month transverse presentations are not very infrequent, and the occurrence offers so little impediment to the expulsion of the child by the unaided efforts of nature as to merit only slight notice. Two cases of this kind have come under my observation.

CASE III.—Mrs. V., age 24, miscarried for the third time at about the beginning of the seventh month, on November 1st, 1878. She was awakened by parturient pains early in the morning, and within a half-hour I was by her side. The bag of waters had ruptured just before my arrival, and on examination I found the cord prolapsed, the right arm expelled, and the shoulder presenting near the vulva. With the next pain the breech and trunk were expelled, and, with the one following, the shoulders and head. The placenta was delivered by expression after some delay, and the patient made a good recovery.

CASE IV.—Mrs. G., age 27, six months advanced in her third pregnancy, was attacked, April 21st, 1880, with pneumonic fever. During the following night she slept from twelve until four o'clock, when she was awakened by commencing labor pains. I saw her at six o'clock, when the os was dilated to the size of a silver dollar—the membranes had just ruptured—with the cord and right shoulder presenting. The faulty position was easily rectified and a dead fetus was immediately expelled, followed in a few minutes by the placenta. The pulmonary inflammation, beginning in the right lower lobe, gradually crept upward until the entire lung was involved. The case was further complicated by a metro-peritonitis. On the seventh day there were well-marked tracheal râles, delirium, and a tendency toward a comatose condition. By the thirteenth day, however, she was convalescent, and soon regained her accustomed health.¹

It has been also generally supposed that transverse presentations were due to some anatomical peculiarity of the mother.

¹ See Cincinnati Lancet and Clinic, June 10th, 1882, p. 502.

Of these there may be mentioned contraction or lack of symmetry of the pelvic brim or iliac wings; obliquity of the gravid uterus, or a shortening of its vertical with a corresponding and compensating increase of the transverse diameters; violent contractions, or contractions of only a part of the uterine wall; a low insertion of the placenta;¹ superabundance of the amniotic fluid, etc. When the malpresentation under discussion recurs over and over again in the same patient in successive pregnancies,² we may reasonably infer that the fault lies with the mother and not with the child. Allowing all this, however, a careful examination of a large number of published cases fails to afford just grounds for attributing the occurrence to any particular pelvic or uterine malformation.

In only one of my cases was there an evident disproportion between the size of the fetal head and the pelvic brim, and in this instance the former was at fault, as it was much beyond the usual size and had bones which yielded only slightly to pressure.

CASE V.—Mrs. A., age 23, a robust and well-developed German-American woman, was taken in labor with her second child September 10th, 1879. The pains were weak, infrequent, and irregular. She remained up and about during the day, and obtained considerable sleep during the early portion of the night, but as morning approached a midwife was summoned. During the second day and a portion of the following night the pains were severe but ineffectual. A physician was called at 1 A.M. on the third morning, who, on examination, diagnosed a presentation of the cord and a shoulder. The membranes ruptured soon afterwards and the cord and right arm prolapsed. During the day the pains were very powerful and the patient obtained no rest. Several attempts at replacing the arm and cord and at turning were

¹ Cazeaux—"Midwifery," Philadelphia, 1873, p. 362—states that in ninety cases in which the placenta had a low attachment the shoulder presented twenty-one times.

² Lecluyse, quoted by Cazeaux, *op. cit.*, p. 362, reports that shoulder presentations occurred in three successive pregnancies in the same woman; and Cazeaux, *op. cit.*, p. 363, saw a woman in whom this occurred five times in succession. Caldwell, *Jour. Am. Med. Assoc.*, October 8th, 1887, p. 472, reports the instance of a woman who had a shoulder presentation in each of three successive labors within three years. Hildreth's patient had shoulder presentations four times in succession. See *Am. Jour. Med. Sci.*, April, 1866, p. 395. See also Smith, *London Lancet*, New York edit., 1856, vol. ii., p. 473.

made, but without success. At midnight the arm and shoulder were removed. I first saw her, in consultation, at 5 o'clock next morning. The patient was then worn and exhausted, with pains at times, and for a while of the most agonizing severity and powerfully expulsive, followed by periods of quiescence. The pulse was quick and wiry, and 136 per minute. The temperature was 102.5° F. The vagina was hot and dry, the anterior lip of the os uteri greatly swollen, and the uterus in a state of ergotinic contraction, with the lacerated chest wall presenting. There were given at once one-fourth of a grain of morphine and three drops of fluid extract of *veratrum viride* by hypodermatic injection. After half an hour the patient was placed in position and version attempted, which, under the circumstances, was no easy procedure. To pass the hand to the fundus uteri required considerable time, inasmuch as even the gentlest manipulation precipitated a pain. By patience, however, a foot was secured, but it was found impossible to bring it below the pelvic brim, and it was here secured by a fillet whilst the other foot was sought for. This was more readily accomplished, and it was successfully brought down, as was the first, by means of the tape. Traction, with the pains, delivered the breech and trunk, and by disengaging the arm the shoulder was released, but the head obstinately resisted all reasonable efforts at delivery by traction. The forceps was now applied, and after considerable manipulation and exertion the child was born. The placenta followed immediately afterward. The child, a well-formed male, weighed fifteen pounds, including the amputated member. The patient had a sharp attack of metritis, but eventually completely recovered. She has since given birth, in a normal manner, to three children.

In one of my cases there was an excessive quantity of amniotic fluid, but I am at a loss to know how this can be credited with being the causative agency in the malpresentation.

CASE VI.—Mrs. O., age 26, a well-developed and usually healthy German-American woman, became pregnant for the second time in December, 1884. She suffered the common inconveniences of early pregnancy, and no cause for uneasiness arose until July 30th, 1885, when she consulted me at my office in regard to a very severe headache which had annoyed her for two weeks. The peculiar feature of the headache was the remarkable suddenness with which a very acute pain would shoot through her head, leaving her, after a moment, in a somewhat dazed condition. These recurred without warning and at irregular intervals, but several times daily. She was the picture of health and was in excellent spirits, yet

an examination of her urine disclosed the fact that she was passing less than a pint in twenty-four hours, and that it was highly albuminous. She was at once placed in bed and upon a mixture of *veratrum viride* and *pilocarpine*. Fluids were given in considerable quantity, and the skin was kept constantly moist and the pulse full and below 75 to the minute. Other measures were had recourse to, to meet special indications, but the above were the ones employed to effect the objects named. This line of treatment was continued until September 12th, when labor occurred. At this time the patient was pale, slightly anasarcaous, and was passing a pint of urine, which was smoky and contained a large quantity of albumin. The abdomen was greatly distended. Pains began at 1 A.M., and I arrived an hour later. At this time the os uteri could not be reached by the examining finger, partly on account of an edematous condition of the labia. After a couple of hours, the pains becoming more severe and recurring at frequent intervals, I introduced the hand into the vagina and diagnosed a presentation of an arm, with the os dilated to the extent of about two inches, with the edges thick and unyielding. An hour later the patient appeared somewhat dazed and she was bled to sixteen ounces. Immediately after this she was placed in the genu-pectoral position, being supported by assistants, and podalic version performed. This was accomplished with the utmost ease, without entering the uterus beyond the depth of the fingers, by combined external and internal manipulation. The feet were brought down, the patient placed upon her back, and the child, a living male, quickly extracted. The quantity of amniotic fluid encountered was very great. The placenta was delivered in a few minutes by combined traction and compression during uterine contraction. After delivery there was suppression of urine for twenty-four hours, after which polyuria appeared and continued for a week. Partial blindness also occurred during the period of urinary suppression. For two weeks the lacteal secretion was very scanty, after which it became excessive. Albumin was not noticed after parturition, and the anasarca rapidly disappeared. Recovery was full and complete.¹

In the vast majority of cases the alleged cause is of doubtful potentiality, and in very many nothing can be brought forward to account for the phenomenon.

CASE VII.—Mrs. M., age 34, a well-formed and healthy

¹ This case was one of remarkable interest and great importance, and is here given in outline only. Many facts of interest are passed over for lack of time and space, and those only are mentioned which have a direct bearing upon the subject under discussion.

German-American woman, was taken in labor February 22d, 1884, under the care of Dr. Ruhlmann. During the day the pains were severe but very irregular. During the night they became stronger, more frequent and regular, but ineffectual. It was not until after the evacuation of the waters, at about midnight, that a diagnosis of an arm and shoulder presentation was made. I saw the patient, at the request of the attending physician, at 7 A.M., and on examination found the right arm prolapsed, the shoulder firmly wedged in the capacious pelvis, the os uteri fully dilated, the pains powerfully expulsive and almost incessant, and the patient greatly alarmed. She was placed in a favorable position and version performed by bringing down a foot, with subsequent easy and rapid delivery of a well-developed female child weighing ten pounds. The placenta was extracted in a few minutes, with rather free hemorrhage. There followed some inflammatory reaction and a tardy convalescence, due to delayed uterine involution. This lady had previously given birth to five children in a perfectly normal manner; there were no incidents in her pregnancy to attract any special notice; there was no excess of liquor amnii; the uterus, previous to the beginning of labor, was not noticeably broadened, and the child was well formed.

The early diagnosis of transverse presentations is of the greatest possible importance, as upon this may depend the lives of the mother and child and the reputation of the attendant. There are two symptoms of the early stages of labor which should put the accoucheur upon his guard, and when they are present a complete diagnosis of the case should be made without delay and at all hazards. These are: (a) Subjectively, an insidious commencement, the pains stealing on almost unawares and at irregular intervals, with prolonged periods of abeyance; (b) Objectively, the os uteri is found very high in the pelvis, dilated to a much less extent than the duration of the contractions would lead one to expect, and there is an inability to detect any portion of the child through the os or anterior uterine wall. Under such circumstances the attendant should never leave his patient until all doubts have been resolved.

CASE VIII. Mrs. M., age 33, a robust Irish-Canadian woman, was taken in labor with her first child, at full term, at 1 A.M., October 17th, 1884. The pains were irregular and not very strong, but were nevertheless annoying and weary-

ing, so much so that on my arrival, at 8 A.M., the patient already presented an anxious and worn appearance. Examination revealed the fact that the waters had escaped, that the os was not dilated more than enough to admit the finger, and that the os and lower segment of the uterus lay so high that nothing further could be made out by an ordinary examination—and no other was made. Remaining an hour and seeing the pains becoming less severe and recurring at longer intervals, I departed, leaving instructions to be called in case the pains became more urgent. Becoming involved in other cases, I was not at home when again sent for, and on my return to the patient at 9 A.M. on the following day I found Dr. Steely in attendance. The case was one of shoulder presentation, with a fully dilated os and powerfully expulsive pains. Under chloroform the shoulder was made to ascend and the head brought to the brim, whereupon it immediately became engaged, together with the wrist and hand which lay against the left side of the forehead. After tedious waiting and with powerful pains a living female child was delivered. The placenta was expelled by compression in a few minutes. The lying-in was uneventful and the patient fully recovered.

That the presentation of a shoulder is a very dangerous complication of labor is universally conceded.

Lee¹ in 59 cases lost 11 mothers (18.7 per cent) and 32 children (54.2 per cent). Churchill² in an analysis of 242 cases found a mortality of 11.1 per cent in the mothers and 52.1 per cent in the children. Of my nine cases, none of the mothers were lost. Two of the children were premature, one at six months and the other at the beginning of the seventh month, and both were still-born. Two were malformed in such manner as to preclude the possibility of survival—one being acephalous and the other hydrocephalous, with bifid spine, etc. In one the child was mutilated by amputation of the upper extremity, and dead before my arrival. In one the cord was prolapsed and pulseless on my arrival, with a still-born child. In one the fetal heart sounds could not be detected, and no movements had been noticed by the mother for several hours, yet previous to delivery it could not be affirmed with certainty either that the fetus was alive or dead. An un mutilated dead child was the result. Two children were born alive.

My experience, as above detailed, has convinced me that a

¹ "Clinical Midwifery," London.

² Quoted by Smith, London Lancet, New York edit., 1856, vol. ii., page 476. See also Churchill, "System of Midwifery."

simple statement of the facts that a certain number of children were born living and another certain number were born dead can never give a clear conception of the fetal risks in the presentations under discussion. I believe that it will lead to false conclusions, inasmuch as the dangers will be overrated, from the fact that in many cases the condition of the child precludes the possibility of its survival, independent of any parturient injuries. There can be no doubt, however, that, under ordinary methods of management, shoulder presentations are terribly fatal to both mother and child.

When the fetus occupies a transverse position, with some part of the upper extremity presenting at the uterine outlet, the interference of art is usually necessary for the termination of labor. In some rare cases, however, spontaneous version occurs, and the woman is delivered by the unaided efforts of Nature.

That this is an occurrence of extreme rarity may be inferred from the fact that it was observed only 10 times in 220,000 labors in Würtemberg,¹ once in 12,523 deliveries in the Vienna Hospital,² and twice in 13,748 cases of labor in the Dublin Lying-in Hospital.³

This may occur in two distinct ways. In one the shoulder retains its position in the pelvic cavity, the fetus is doubled upon itself and is delivered by the breech. It is only possible when the fetus is small and the parturient canal capacious. This is the method described by Douglas.⁴ In the other the arm and shoulder pass above the pelvic brim and the fetal pelvis comes down, forming a breech presentation. This is the process witnessed by Everard in 1691, in the labor of his own wife,⁵ and so clearly described by Denman.⁶ It may occur with a large-sized and full-term fetus and with the mother's pelvis not above the ordinary capacity. A spontaneous cephalic version, accompanied by similar phenomena, has been observed in a few instances.

¹ Riecke, quoted by Wright, *Western Journal of Medicine*, April, 1868, page 206.

² Spaeth, quoted by Wright, *op. cit.*

³ Johnson and Sinclair, "Practical Midwifery," London, 1858, page 112.

⁴ "Mechanism of Natural Version," Dublin, 1811.

⁵ See Wright, *op. cit.*, page 205.

⁶ "Practical Midwifery," Philadelphia, 1821, page 451.

"A young woman, pregnant for the second time, came into the hospital at 10 o'clock in the morning. The os uteri was very little dilated; nevertheless I could recognize a second position of the left shoulder. The waters did not escape until 3 in the afternoon, and I did not wish to go after the feet, as the pains were neither very strong nor very frequent, and I had some confidence in the assertions of Denman on this subject. At 8 o'clock in the evening the shoulder had sensibly moved toward the left iliac fossa, and I could then readily detect the ear at the right. At 11 the temple had almost gained the centre of the orifice, the contractions were augmented in energy, and the cervix was entirely effaced. At midnight the vertex had become lower, the head engaged, and in the course of an hour the vertex was delivered."¹

This case of cephalic version differs from the majority of examples of spontaneous podalic version in the time required for the completion of the process. In podalic version all observers unite in saying that, when once begun, version is usually completed in a very few minutes.

Spontaneous version, or the condition leading up to it, is very fatal to the child. Thus of 137 cases collected by Velpeau,² 125 of the children were still-born. Of 35 cases analyzed by Wright,³ 22 children were dead, 9 living, and in 4 the result was not stated. Of 30 cases collected by Denman, 4 all the children were still-born except two.

But this fortunate termination of the case cannot be depended on, and the following, from the graphic pen of Tyler Smith,⁴ is what usually occurs in shoulder and arm cases when the maternal pelvis is of normal capacity, the child of ordinary size and living, and no assistance is rendered:

The first stage of labor, as already mentioned, is slow, and the pains are inefficient until the shoulder fully engages the os uteri. After the rupture of the membranes, which may occur at any time, there is usually a pause in the progress of labor. The liquor amnii is quickly discharged, but some time elapses before the presenting part of the child comes to exert full pressure on the os and cervix uteri. When the shoulder and upper

¹ Velpeau, quoted by Cazeaux, *op. cit.*, page 367. See *American Journal Medical Sciences*, 1859, page 279, for another case.

² Quoted by Cazeaux, *op. cit.*, page 371.

³ *Western Journal of Medicine*, April, 1868, p. 208.

⁴ *Op. cit.*

⁵ *London Lancet*, New York edit., 1856, vol. ii., page 473

part of the body of the child is low in the pelvis before the escape of the liquor amnii, the pains are at once increased in severity, and the fruitless efforts at the expulsion of the fetus soon become dangerous both to the child and the mother. The shoulder is the point, as it were, of a large wedge, one side of which is formed by the neck and head, and the other by the arm and pelvis of the child. Its passage through the pelvis in this position is impossible. If the case proceeds, the pressure on the fetus becomes immense, and its long continuance frequently destroys the child by arrest of the circulation in the placenta and funis, or mechanical compression of the body. The danger to the mother is very great. Either the vaginal discharges become offensive, and inflammation and sloughing of the parturient canal occurs; the woman dies of exhaustion, worn out by the long-continued struggle; or the uterus is ruptured and she perishes in this manner. Probably, at the present time, a case hardly occurs in which a patient suffering from arm presentation passes on to the extreme catastrophe without some assistance; but, when rupture of the uterus does not occur, cases are sometimes seen which have spread over several days. It may be said that when the fetus is mature, and the pelvis of ordinary size, death, both to the mother and fetus, is well-nigh inevitable, in cases of arm presentation when no assistance is given."¹

I now come to the *raison d'être* of this communication—the management of these cases. I believe that I have the satisfaction of advocating a mode of treatment that will render shoulder presentations as safe to mother and child as are those of the head and breech, and this, not with difficulty and doubt, but with the utmost ease and certainty. In 1885 I published² a short note upon this subject, of which the following is a copy:

CASE IX.—“I recently was called to see a woman, aged 44 years, three days in labor with her thirteenth child. She was a well-formed woman, and had passed through the period of pregnancy to full term with no symptoms of any importance. When I arrived I found the cord prolapsed and the left shoulder presenting in the pelvic brim. The os was fully dilated.

¹ The dangers of cross-presentations were recognized by the ancients. Thus Hippocrates—see “*Œuvres d'Hippocrate*,” par Litttré, t. viii., p. 79—compares the fetus in the womb to an olive in a bottle, which can only be extracted by one or the other extremity. Albertus Magnus was informed by midwives that when the head presented all goes well, but when an arm then danger arises. See Goodell, *Am. Jour. Med. Sci.*, January, 1871, p. 63.

² *Jour. Am. Med. Assoc.*, April 11th, 1885, p. 395.

and the amniotic fluid had long since drained away. The woman had become restless and irritable, was a little feverish, and the vagina and os uteri were swollen, dry, hot, and painful.

"The cord was pulseless, but was warm and moist, and the midwife informed me that it had been pulsating only a short time before. I determined, therefore, to replace the cord before proceeding to turn, and to facilitate this I placed the patient in the knee-chest position. The cord was then easily replaced well up in the uterine cavity. In doing this I was astonished at the facility with which I passed my hand by, and the mobility of the previously firmly wedged-in shoulder; and pursuing the investigation further, I found that I could readily push up the shoulder and, by external manipulation, bring down the head, which was done. Maintaining the parts in this position, I directed the patient to rise upright on her knees, and I soon had the satisfaction of knowing that the pains were engaging the head in the superior strait. A dose of ergot was administered, the woman placed in a more comfortable position, and the labor was soon terminated in a natural manner, the child being dead. The mother recovered without any trouble whatever.

"In this connection I wish to call attention to the old but long-neglected plan of placing the woman in the 'knee-chest' position when about to perform version in cross-presentations. In this position the operator has the aid of gravity in relieving the downward pressure upon the pelvic brim, thereby facilitating the passage of the hand into the uterus and all the subsequent manipulations, and, I conceive, tending to prevent the unfortunate accident of rupture of the uterus. I feel confident, also, that cephalic version will be found perfectly feasible in many cases in which podalic version would be the only alternative with the woman in the ordinary position. Another advantage is that the pains are much less powerful and effective when the uterus is suspended than when it is lying upon the spine and pelvis. I should very much like to see this method of dealing with these difficult cases given a fair and impartial trial by accoucheurs, and the results laid before the profession for future guidance."

This short paper was widely copied in the medical journals of this and other countries, and, judging from the number of letters received, attracted considerable attention. At the time of my publication I had never seen a report of a similar case, and had met with only a single vague allusion to the procedure. It was not long, however, before I heard from several original discoverers of this method of management of shoulder presen-

tations, and for a time my correspondence was a beautiful example of the fact that the same thing is being constantly discovered and rediscovered by independent observers in widely separated localities. To me my case was the revelation and appreciation of a new principle, an original discovery of a novel truth, and I have no doubt but that the same can be said by each of the gentlemen who have published essentially the same plan.

The first letter may be taken as a fair sample of the series, and is as follows :

YOUNGSTOWN, OHIO, April 14th, 1885.

DEAR SIR:—In your letter to the *Journal of the American Medical Association* I am delighted to see the confirmation in actual practice of an idea I suggested in a report of three cases in the January, 1882, number of the AMERICAN JOURNAL OF OBSTETRICS, New York, on the "Genu-Pectoral Position as an Aid to the Rectification of Malpositions of the Fetus." Knowing how readily the position of the child may be changed in this position of the mother, it provokes me to read the learned discussions of leading men in medical associations as to the best time and how to turn the child. I believe it possible to correct any abnormal presentation with the exercise of very ordinary skill on the part of the operator. In the "knee-face position" I have corrected several other cases than those reported and referred to, with less trouble than turning (arm, shoulder, and cross-presentations repeatedly). Other physicians here have adopted the plan with equal success, Dr. Matthews several times.

You speak of the "old and long-neglected plan of 'knee-chest' position." Dr. Mundé, editor of the AMERICAN JOURNAL OF OBSTETRICS, stated in a letter to me that my cases were the only ones on record, and I have been unable to find a report of others. If you can call my attention to any others, you will oblige me greatly. If you will call the attention of the editor of the *Journal of the American Medical Association* to my cases, it may tend to a better practice, in the future, than turning, so dangerous to child and mother.

Very truly yours,

E. F. WELLS, M.D.

C. N. FOWLER.

To this I replied as follows :

MINSTER, OHIO, April 16th, 1885.

DEAR DOCTOR:—Yours of the 14th came to hand yesterday, and in reply I will state that I came upon the device referred to by accident, thought the idea original, and published it for

the purpose of drawing attention to the subject. I am glad to know that I have been preceded in this field by you, and that you have called my attention to the fact. Although engaged in general practice, I make no attempt to keep up with obstetrical literature—being especially interested in other lines—and this accounts for my ignorance of the existence of your paper. I have, however, read most of the modern obstetrical works, and have a large number of volumes of journals issued during the past forty years, all thoroughly indexed, and in but one of these can I find mention of the genu-pectoral position in the rectification of the fetal position; but in this instance the reference is such as to have led me to think that there was nothing *new* in the position, although the reasons undoubtedly are. If you will turn to page 264 of the third edition of Dewees' "Midwifery," you will find this sentence, under the heading of "The Position of the Woman for Turning": "Some recommend the side, *others the knees*, and *others the back*." It is true that here and at page 506 he distinctly says that he does not prefer this position, yet his words convey the impression that in his day some made use of this position. I imagine, however, that the identical proceeding through which we have gone has been gone through by others—unrecorded experience—because prolapse of the cord is of rather frequent occurrence in shoulder cases, and may come on early, before the presentation has been fully made out. In this case almost any accoucheur would place the woman in this position for the purpose of replacing the cord, and in doing this he must be rather a dull man if he does not take the hint which Nature gives him.

I believe this subject to be one of prime importance, and that it cannot be discussed too freely. Would it not be well for you to drop a note to the editor of the *Journal*, criticising my claim that the "knee-chest" position is "old," and calling attention to your article in the *AMERICAN JOURNAL OF OBSTETRICS*? The correspondence might bring out many points of historic interest.

Very respectfully,

EDWARD F. WELLS.

C. N. FOWLER, M.D., Youngstown, Ohio.

Dr. Fowler published my letter in the *Journal of the American Medical Association*,¹ accompanied by the following note:

YOUNGSTOWN, OHIO, May 22d, 1885.

DEAR SIR:—Dr. E. F. Wells reported a "Case of Shoulder Presentation" in the *Journal* of April 11th. I was much

¹ June 6th, 1885, p. 643.

interested in his report, having reported three typical cases in the *AMERICAN JOURNAL OF OBSTETRICS* in 1881, under the title of "Genu-Pectoral Position as an Aid to the Rectification of Malpresentations of the Fetus."

I wrote to Dr. Wells, asking the source of his authority for calling it "an old and long-forgotten position," and I enclose his reply. The practicability of the position is, however, the main point to be discussed. My cases were cross-positions—shoulder and one hand protruding through the vulva. Since that time I have corrected several malpositions by this method. It is more easy than podalic version, and without the risk to the child.

Dr. Wells' case is not overdrawn. In my case of arm presentation, simple pressure upon the head and hip of the child externally carried the arm within the uterus without direct vaginal manipulation. Ordinary skill will correct any malposition, the woman being in the knee-face position.

Very truly yours,

C. N. FOWLER, M.D.

EDITOR *Jour. Am. Med. Assoc.*

That the knee-chest position in the correction of shoulder presentations would be found to have been frequently "discovered" and "discovered" again by accident and the force of circumstances, is amply borne out by the literary history of the subject.

Thus Wenning¹ says that it was known early in the Christian era,² and in the days of Queen Elizabeth it was the custom, according to Rainold,³ to push up the presenting shoulder "till such tyme as the head came forward," which can only occur, at full term, when the force of gravity and the powerful expulsive pains are held in abeyance.

The genu-pectoral position in transverse presentations was directed by Deventer⁴ in 1701, Mowbray⁵ in 1724, Bracken⁶ in 1737, Von Knoer⁷ in 1747, Smellie⁸ in 1753, Boessel⁹ in

¹ Cincinnati Lancet-Clinic, October 12th, 1889, page 393.

² See Soranus, "Arte Obstet.," Wenning, op. cit., et al.

³ In his "Woman's Booke," as quoted by Maxson, American Practitioner, March, 1877, page 131.

⁴ "Operationes Obstetricæ," etc., Lugd., 1701.

⁵ Quoted by Wenning, op. cit.

⁶ Ibid.

⁷ Ibid.

⁸ "Collection of Preternatural Cases and Observations in Midwifery," vol. iii.

⁹ "Hebammenkunst," Leipzig, 1756.

1756, Bard,¹ Shuppen,² and Wigand³ at the end of the last century, and Ritgen⁴ in 1820.

Smellie's⁵ case, which occurred in 1753, is graphically reported by the gifted author :

After having failed in his attempt at version with the patient lying upon her back, he says: "Finding the contraction of the uterus so strong, and the straining of the patient so great, that I could not reach the feet, I caused her to be turned to her knees and elbows to prevent further strainings. While she was kept firm in this position by the assistants, I introduced my hand again, and, finding the resistance less, I pushed it up gradually along the fore part of the uterus, where I found one of the legs, which I brought down; then pushing up the shoulder and pulling the limb alternately, as in the former case, I extracted it without the os externum."⁶

In 1866 Dr. Charles Hildreth⁷ published two cases of version with the patient in the genu-pectoral position :

A German lady, with large pelvic development, was delivered with the forceps on the occasion of her first labor. Her second and third confinements were complicated by shoulder presentations and delivery of dead children, effected only after mutilation and great difficulty. On February 4th, 1864, she was taken in labor for the fourth time, and again the shoulder presented, with the arm prolapsed. The waters had been long evacuated when she was first seen. The pains were powerful, and the shoulder so firmly impacted that turning, with the woman in the ordinary position, was found to be impracticable. The patient was now placed in the knee-chest position.

¹ Quoted by Parvin, *American Practitioner*, January, 1877.

² *Ibid.*

³ "Die Geburt des Menschen," Berlin, 1820.

⁴ "Mechanischen Hülfen bei Entbindungen," Giessen, 1820.

⁵ *Op. cit.*, page 232.

⁶ For further historical information consult Banta, *Cincinnati Lancet-Clinic*, September 28th, 1889, page 338; Carstens, *ibid.*; Cutts, *AMERICAN JOURNAL OF OBSTETRICS*, 1887; Engelmann, "Labor among Primitive Races"; Galbraith, *American Practitioner*, 1880, and *AMERICAN JOURNAL OF OBSTETRICS*, 1882; McClintock, "Smellie's Midwifery," Sydenham Society edition, vol. i.; Parvin, *American Practitioner*, 1877, and "Science and Art of Obstetrics"; Ploss, "Lage u. Stellung d. Frau während d. Geburt," u. s. w., Leipzig, 1872; Richardson, *Medical Communications Boston Medical Society*, vol. xiii., 1885, page 412; Wenning, *op. cit.*, et al.

⁷ *American Journal Medical Sciences*, April, 1866, page 395. See also *American Journal Medical Sciences*, July, 1867, page 117. See also Culbertson, *Cincinnati Lancet-Clinic*, September 21st, 1889, page 315.

The arm receded, and with the greatest ease the shoulder was pushed up and the feet brought down. Delivery of a living child was quickly effected. This lady was again confined July 23d, 1865, and, as usual, the arm was found in the vagina. Version was a second time easily and speedily performed with the patient upon her knees and chest.

Dr. Maxson¹ made his discovery in the same manner that it occurred to me, *i.e.*, in replacing a prolapsed cord.

He says: "Being called out of town by Dr. George N. Dox, an eminent physician of the place, in a case of prolapsed cord, attended with a transverse abdominal presentation operating undoubtedly as the cause. He having failed in all the other methods, I placed the woman upon her knees, as suggested by Dr. T. G. Thomas, of New York, for replacing prolapsed cord, and very soon succeeded in getting the cord back; and when the woman had lain down upon her side, I was surprised and highly gratified to find that the *position*, together with the slight manipulation used in putting back the cord, had changed the abdominal into a perfectly natural head presentation."

Dr. Linton,² of Columbus, Ind., also independently made use of this method several years ago.

His cases are as follows:³ "On the evening of the 8th of March, 1877, I was requested to visit Mrs. G. Arriving at her bedside, I found her in labor and terribly excited, so much so that it was with difficulty that I learned this to be her third confinement; that she had been in labor since early morning, and that the child had been in almost constant motion since the commencement of the pains; that she was certain that it had made as many as eight or ten evolutions during the day; and that whilst it was in the act of turning she was seized with a pain which forced the child down in such a position that she was quite positive that it could not be born. . . . The membranes being unruptured, much caution was required to determine the exact position of the child, but I soon discovered a cross-presentation. . . . From a careful examination I ascertained the right shoulder to present, head resting on crest of the left ilium, back in front, with os quite dilatable. . . . I had her to kneel, with breast resting on a pillow. . . . With the fingers of my left hand introduced within the vagina, I

¹ Dr. Maxson published his method in the *Medical and Surgical Reporter* in the spring of 1867; in the *New York Medical Record*, October 25th, 1875; and in the *American Practitioner*, March, 1877.

² *American Practitioner*, March, 1877, page 185.

³ *American Practitioner*, October, 1877, page 209.

was enabled to graduate the pressure on the shoulder of the child. . . . My effort was soon rewarded by a gradual receding of the shoulder, and the head as gradually approaching the pelvic strait; the shoulder suddenly passing from reach, and the head as suddenly assuming a normal position at the pelvic brim."

The second case occurred on the night of the 13th of September of the same year, and was seen with Drs. Bland and Banker. The case was a tenth confinement, complicated with placenta previa and presentation of the left arm and shoulder. In the knee-chest position podalic version was performed and the woman safely delivered.

Dr. Parvin¹ also originated this method, having successfully performed podalic version in case of an impacted shoulder presentation, after having signally failed by the ordinary methods.²

Now as to the method of procedure. It must be borne in mind that almost all obstetric operations are done through necessity, not choice, and that necessity knows no laws. The operator must proceed according to the exigencies of the particular case in hand. By this method, however, the operator has the widest possible control of the case.

The operation may be performed at once if the case is seen late, but if the physician is called in early it is usually advisable to delay until the os is well dilated or easily dilatable. The patient is placed upon her knees and chest, or in any other position that will suspend the uterus forward and away from its vaginal attachment. The operator places himself on the side of the patient corresponding to the position of the fetal head, and employs the hand next the patient in the internal, and the other in the external manipulations. The hand is introduced into the vagina, the membranes are ruptured if yet intact, and pressure is made upon the shoulder toward the child's pelvis, in the direction of the fetal and uterine curves, and away from the superior strait. Simultaneously pressure is made externally upon the fetal head or breech as seems needed. Under this procedure the shoulder soon

¹ American Practitioner, January, 1877, page 26.

² For further information see Wright, American Practitioner, February, 1877, page 124; Gross, Introductory Lecture, Philadelphia, 1867; Marchal, La Tribune Médicale, December 1st, 1867; Hicks, AMERICAN JOURNAL OF OBSTETRICS, 1879, et al.

passes out of reach and the head takes its place at the pelvic brim. The woman is now raised upright upon her knees and supported in this position until the head becomes fixed (usually by the next pain), after which she assumes the ordinary obstetric position. In rare instances it may be found impossible to bring down the head, and in these cases the direction of the pressure, internal and external, is reversed, and the breech is made to engage. If both these procedures are found to be impracticable, or if for any reason a very rapid delivery is desired, a foot is sought for and podalic version performed. Ordinarily the fingers or hand need enter the uterus only a very short distance, but if a foot is sought for the hand and forearm must penetrate very deeply, inasmuch as the long diameter of the uterus is considerably augmented.

With the parturient woman in this position, the abdomen is relaxed to the greatest possible extent, the pains are less powerfully expulsive, the uterus is lengthened in its long and shortened in its transverse diameter, and the impacted shoulder is drawn away from the pelvic brim by the force of gravity. Correction of the malpresentation is greatly facilitated by the shape of the uterus and the ease with which any operative manipulations may be carried out.

Speaking of this method to Dr. Maxson, Sir James Y. Simpson declared that it was "the best thought he ever had," and Dr. Edward Warren-Bey wrote to the same gentleman that "it is not only the best thought you ever had, but one of the best thoughts of the century." To one who has practised the ordinary and this improved method of managing shoulder presentations such words of eulogy will not seem exaggerated.

THE CLINICAL FEATURES OF PYO-SALPINX.¹

BY

RALPH WALDO, M.D.

As at least half of the post-mortem examinations made on women show inflammatory disease of the Fallopian tubes—Henning states three-fourths; Winckel found two hundred and five in five hundred post-mortems—and, while it is most common during the child-bearing period, still there is no age, not even childhood, that is exempt, it behooves us to throw all the light possible on the clinical history of these cases, so as to determine the most rational method of treatment. If slight affections of the tubes are going to increase, so as to make the sufferer an invalid, the earlier they are removed the better; but if, on the other hand, the more severe forms of disease, under appropriate treatment, can be cured or so mitigated as to cause the patient very little inconvenience, it is a question whether the surgeon is justified in submitting her to the risks of a laparotomy, to say nothing of rendering her permanently sterile. I am well aware that a woman with a double pyo-salpinx is of necessity sterile, but we can all recall women, who have been told they were suffering from double pyo-salpinx, who have afterwards become impregnated and carried their child to full term.

The following histories will serve to illustrate the subject:

CASE I.—Age 39 years; married eleven years. Menstruation normal, excepting that she flowed for five to six days. Has never been pregnant. For the first few years of her married life she took a vaginal douche after intercourse, to prevent impregnation: recently has been very anxious to have children. Has suffered from attacks of intermittent fever at irregular intervals for the past ten or fifteen years, also from severe headaches accompanied by marked nervous excitement, for which she has taken morphine in sufficient quantity to have acquired a mild habit. Excepting at times a dragging sensation in the lower part of the back and abdomen, and occasionally a purulent discharge from the vagina, there have

¹ Read before the New York Obstetrical Society, November 19th, 1889.

been no symptoms that would attract attention to the generative organs. In fact, five years ago she couldn't be prevailed upon by her attending physician to have a physical examination made.

January 2d, 1889, she was in a very weak condition, so that it was impossible for her to walk straight. As her weight was between ninety and a hundred pounds, the pelvic contents could be easily examined by bimanual palpation, with the finger either in the rectum or vagina. There was the first degree of descensus uteri, and on either side of the uterus two elongated tumors about an inch in diameter. Pressure on the tumors or movement of the uterus produced marked pain. At subsequent examinations it was possible, by making gentle pressure in the neighborhood of the tubes, to cause a discharge of pus from the external os. At no time was there a decided fluctuation detected. Her complexion was bad, circulation poor, and there were at times a slight rise in temperature and chilly sensations. Some of this febrile disturbance was undoubtedly due to malarial poisoning. Occasionally, especially for a week following the menstrual flow, she was melancholic, and for several weeks it was impossible for her to hold a continuous train of thought or write a coherent letter. She frequently had "crying spells," without being able to give a cause. At irregular intervals of from two to four weeks the pain would become more marked in one iliac region, accompanied by increase in the size of the tumor on the corresponding side of the uterus. In a few days this was followed by a discharge of bloody pus from the external os and diminution in the tumor. The amount of this discharge, which at first lasted three or four days, has gradually grown less and the intervals longer, until now it is about four months since one of these attacks.

This undoubtedly was a case of double pyo-salpinx, with the uterine ends partially, or at least very lightly, closed, so that the accumulated pus would escape through the tube rather than rupture its walls.

The first thing thought of was the removal of the tubes and ovaries; but as the patient's health was very bad, and as a short time before I had removed a small wart from her neck, which caused marked nervous excitement, and the wound did not unite well, it was thought advisable to wait until her general condition could be improved. She was given tonics, and mild currents of galvanism were used, with one electrode (negative) in the vagina and the other on the abdomen. After giving galvanism three times a week for a month, the condition was not improved, and the treatment was changed to applications of the compound tincture of iodine to the vault of the vagina, and glycerin on tampons, three times a week. When

there were no tampons in the vagina, hot vaginal douches were used twice a day.

April 6th, 1889, Dr. C. C. Lee was consulted with, and he substantiated the diagnosis, and, owing to the patient's general ill-health, did not think it was advisable to operate, if at all, before fall, unless there was a marked change in the local condition. This course has been followed, and, while the tubes are still slightly enlarged and tender, there has been no marked discharge of pus during the past four months, her general health has very much improved, the mind is clear, and she is able to be about and take a good deal of light exercise.

Possibly at some future time it will be necessary to remove this patient's tubes and ovaries, but I do not propose to do it as long as she continues to improve.

CASE II.—Age 22 years; single; menstrual history normal; prostitute. States that she contracted gonorrhea for the first time January 21st, 1889. I saw her first February 26th, 1889. She was confined to her bed with severe metritis, endometritis, and double salpingitis. The tubes could be easily felt. There were marked febrile disturbance and severe pain, so that it was necessary to administer morphine for a number of days. This patient was told that it might be necessary to perform an operation on her, but that we would see what could be done first. She was told that she would of necessity be sterile after an operation; but thinking that there was a double pyo-salpinx, she was also told that probably her present disease rendered her sterile. After using the compound tincture of iodine, glycerin on tampons, and hot vaginal douches for two months, all of the rational symptoms disappeared, but some enlargement of the tubes remained. They were not tender on pressure. She was advised not to have the tubes and ovaries removed unless the disease increased.

June 8th she had an acute coryza, but the tubes were not troubling her.

September 27th she came to my office, and stated that she had "missed her menses" a few days and was afraid that she might be pregnant.

October 23d, had an abortion at about the second month, she having passed a catheter into her uterus a week before. The metritis, endometritis, and salpingitis again returned. Has been treated the same as before, and is much better but is not entirely well.

From the course of this salpingitis I am led to think that it was catarrhal in nature and not a true pyo-salpinx; and this case is reported because comparatively little has been written on pyo-salpinx excepting in connection with salpingitis in

general, and most of that is vague. Most authors have written so as to make me think that inflammation of the tubes due to gonorrhea of necessity results in pyo-salpinx. R. B. Hall¹ states that pyo-salpinx may be contracted in two different ways: "(a) by a chronic process, causing dropsy of the tube, which, by repeated attacks of inflammation, is turned to pus; (b) it may be rapidly produced by an acute process following gonorrhea or puerperal disease."

I have seen a number of cases of salpingitis due to gonorrhea that have been so benefited by local applications that the patient was not aware that anything was the matter. In most instances, by a careful examination through the rectum, the tubes were found to remain slightly enlarged but not tender.

In conclusion, I will say I believe, as L. Bandl² states, that pyo-salpinx may be developed in two different ways: (1) "a chronic process causes a hydrops tubæ which is changed to pus by acute inflammation; (2) it can be rapidly produced by an acute process," and, furthermore, "a catarrhal secretion in a tube is easily changed to pus by infection from a simple examination, more especially from an intra-uterine, when strict antisepsis is not resorted to." The indiscriminate use of the sound is probably the cause of a great deal of pyo-salpinx.

The only positive evidence of pyo-salpinx is to obtain pus from the tube by gently pressing it out or by the use of the hypodermatic needle. The latter procedure in most instances is dangerous and should not be resorted to.

Pyo-salpinx does not of necessity follow salpingitis due to gonorrhea or sepsis, but it is apt to follow very acute endometritis from any cause. As a rule it is of slow advent, the patient giving a history of uterine disease extending over years, and her general health is very much impaired. As a rule the symptoms are aggravated at or near the menstrual flow, and in many instances they are increased midway between. At irregular intervals there are usually slight, chilly sensations, with slight elevations in temperature. If you find

¹ Proceedings of the American Association of Obstetricians and Gynecologists, AMERICAN JOURNAL OF OBSTETRICS, October, 1888, page 1111.

² "Cyclopedia of Obstetrics and Gynecology," vol. xii.

fusiform swellings, many times more or less irregular, at either side of or slightly behind the uterus, the tubes are probably diseased; if, in addition to this, they are tender and fluctuation can be detected, especially if there is an increase in the vaginal temperature, in all probability there is pyo-salpinx present.

As to the treatment of pyo-salpinx, the only radical cure is to remove the diseased tubes; and where one tube only is distended with pus, both should be removed if laparotomy is performed, for the well tube will almost invariably become diseased. If the patient is in very poor health, and by careful manipulation the pus can be forced out through the uterus, it is not advisable to operate, for, as in case 1, the patient can, in many instances, be treated by palliative measures so that the disease is decidedly mitigated; but, on the other hand, if you have a tube that is markedly distended with pus, in spite of the patient's health it should be removed, for the risk of rupture and general peritonitis is very great.

I wish to lay special stress on the class of cases illustrated by case 2, where there is acute inflammation of the tubes, but where they are not markedly distended. In these cases we are very apt to diagnose pyo-salpinx, and remove tubes that if left could be sufficiently cured to allow the passage of an ovum to the uterus; and innumerable histories prove that these patients, at least as far as their own sensations are concerned, are restored to health without resorting to a surgical operation. These cases should be treated at least from three to six months before an operation is performed, and it should not be performed if they have received marked benefit from the treatment.

THE PREVENTION OF OPHTHALMIA NEONATORUM.¹

BY

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IN no disease is the cause more clearly a micro-organism than in ophthalmia neonatorum. And certainly in no disease does the faithful use of cleanliness and antiseptis accomplish its aim better than in this affection.

These few notes cannot claim the dignity of a formal paper, yet I should like, through a few collected statistics, to draw your attention to what has been and may be accomplished in the prevention of this form of ophthalmia. From the records of the hospital at Leipzig, we find that for six years the proportion of blenorrheas to births varied from seven to thirteen per cent. But after the institution of prophylaxis only one case occurred in the following 200 births, and in that one the ordered precautions were, through a mistake, not carried out. From the records of the Charité at Berlin, where for five years the proportion of blenorrheas had ranged from nine to thirteen per cent, we find that after proper prophylaxis was inaugurated this proportion fell to one and one-half per cent in the first 460 births and to nothing in the next 260. In the first 703 births after proper prophylaxis at Bonn, and the first 1,000 cases at Dresden, there was only 0.5 per cent. In a second set of 420 births at Dresden, 330 at Giessen, and 943 at Marburg there were *none*.

These figures speak for themselves and prove that the evil can be prevented. They are the records of large institutions where, from the character of the patients and the aggregation of so many together, the liability to blenorrhea is especially great.

Very many agents have been employed in carrying out prophylaxis: nitrate of silver, corrosive sublimate, chlorine

¹ Read before the Society of the Alumni of Charity Hospital, December 10th, 1889.

water, carbolic acid, sulphate of copper, iodoform, peroxide of hydrogen, β -naphthol, and simple alum water. All of these are efficient, but the best and most generally used is the nitrate of silver, according to a method modified from that of Credé, of which the following are the steps: As soon as the umbilical cord is ligated, the face of the child is washed and the closed eyes wiped carefully. They are then opened and a drop of a two-per-cent solution of nitrate of silver put in each. Though harmless, this may seem a strong solution for the healthy eye of an infant. It has been found equally efficient if only half of one per cent is used.

Haussmann disinfects the maternal mucous membranes and all instruments employed during labor, and cleanses the face and eyes of the infant, but he does not make installations of a disinfectant into the conjunctival sacs.

Simeon Snell, in the Jessop Hospital, Sheffield, cleanses the face and eyes of the infant as soon as the head is born, the eyes being opened and bathed with a simple solution of alum. Care is taken to prevent any reinfection; and if the eyes at any time before the third day appear at all red, they are treated to a drop of a one-per-cent solution of nitrate of silver.

Out of an equal number of cases treated by the Credé and Haussmann methods, the Haussmann gave 2 per cent of blenorrhœas, while the Credé gave only 0.5 per cent. But the still more simple method of Snell gave, out of 2,200 cases, a few blenorrhœas in the first 200, but in the subsequent 2,000, when manipulation was more skilful, *not one*.

From statistics that have been collected by Dr. Lucien Howe, of Buffalo, it is quite evident that blindness is steadily increasing in our land; and though our blind asylums may not owe quite as large a per cent of their inmates to infantile ophthalmia as Credé believes these institutions do in England, France, and Germany, yet as long as this preventable disease furnishes any it is worth while to learn the best methods to stamp it out, and to put them in practice. When we have convinced ourselves that infantile blenorrhœa can be averted, the next step will be to so arouse the community and instruct it that this knowledge may be applied where it will accomplish the most good.

Ophthalmia neonatorum is a disease of the poor and ignorant.

From papers by Grossmann and Snell, it seems that a difficulty met with in England was in convincing officials that the expense of instructing nurses, midwives, and general practitioners by spreading of literature and so on was not greater than the good to be gained. Mr. Snell estimates that the literature part of the expense of instruction would not exceed thirty pounds (£150) a year for all England; and that its distribution could be efficiently made by heads of lying-in asylums, registrars of births, societies for prevention of blindness, eye infirmaries, etc. Then he opposes to the expense to the State of instruction the value of the services of those blind from infantile blenorrhea. Out of the 22,000 blind in the kingdom, over 7,000 are so from this disease—7,000 persons a burden to the State for their support who would, save for this preventable disease, have been a source of revenue. If one computes at the most moderate rate the value, in wage earning, of this army if restored to sight, it will prove in a very striking way what the State loses from this disease.

In conclusion I submit the following questions: 1. Should not every midwife be instructed, previous to receiving a diploma, in the symptoms and treatment of ophthalmia neonatorum? 2. Should not every child be subjected to the method of Credé, or some other equally effective, at birth? 3. In case of inflammation appearing from the third day on, should not the midwife notify a doctor? Proper fines and suspensions of the certificate being exacted for carelessness.

CORRESPONDENCE.

EMBRYOTOMY vs. CESAREAN SECTION.

TO THE EDITOR OF THE AMERICAN JOURNAL OF OBSTETRICS.

DEAR SIR:—Will you kindly allow me to correct the following statement in Dr. Wathen's memoir on craniotomy in the December number of the JOURNAL: "The following from Barnes is quoted in defence of embryotomy: 'Craniotomy done under fair conditions, such as are postulated for Cesarean section—that is, done at a chosen time with due skill—does not involve any *material* mortality.' But the force of this argument is destroyed by his further statement that, if we save the life of the mother by sacrificing the child, she may afterwards be delivered of living children by the induction of premature labor. As it is conceded that few children are born alive in pelves of less diameter than 3 inches conjugata vera, we may logically conclude that most of Barnes' cases had a diameter of 3 inches or more."

In the first place, I write *Cæsarian*, not *Cesarean*.¹

In the second place, I say craniotomy, done under the conditions specified, does not involve *any* "*maternal*" mortality. Far be it from me to regard any mortality as not "*material*." I do not accept the statistics of Dr. Wathen. They teem with fallacies.

In the third place, I discriminate between cases of labor at term with conjugate diameter under 2 inches and those with conjugate diameter of 3 inches and more.

In the first class, I say, certainly do Cæsarian section; although I maintain, from ample experience, that craniotomy, according to my method of breaking-up, can be performed *without maternal mortality*. It is more difficult than Cæsarian section, I admit. The mortality to mothers from Cæ-

¹ It is but fair to Dr. Wathen to state that for many years the JOURNAL has made a practice of dropping the silent element in diphthongs whenever practicable.—ED.

sarian section, notwithstanding all improvements in operative skill, must yet be regarded as "*material*." That it will go on diminishing in the hands of those few surgeons to whom sufficient opportunities for developing skill can fall, is pretty certain; that it will ever reach the vanishing point, even in select hands, is more than doubtful. And until that point, steadily to be aimed at, is attained, if we look at the mother's side only, judgment must be given against Cæsarian section.

But now comes the more practical question: Ought the prospect of saving the child, with or without saving the mother, to turn the scale? The conditions are several: First, there is the case of the woman at term carrying a live child. That child cannot be born alive *per vias naturales*. The conjugate diameter is under 2.50 inches. Here the Cæsarian section, which gives a fair prospect of life to both mother and child, may be preferred.

When the question was put to Napoleon, in the case of his wife: Which life shall be saved? he said: "Save the mother; it is her right." At that time, and for many years after, no woman had ever survived the Cæsarian section in Paris or Vienna. The question then lay absolutely between matricide and feticide. We have got beyond that era. Now the question is qualified. Probable, very probable, safety of the fœtus, probable safety of the mother—a reasonable prospect of saving two lives. This may be held to justify the Cæsarian section. Still no absolute law can be laid down. All the conditions in the individual case before the surgeon must be weighed. These are too many to discuss on the present occasion.

Now another case: A woman with a conjugate under 2.50 inches is in early gestation. Shall she be allowed to go on to the stage of viability and then be delivered by Cæsarian section, or shall abortion be induced? There can be no question here as to which course is the better for the mother. I am not yet prepared to risk her life in favor of the problematical birth of a living child.

The case put by Denman, whether craniotomy ought to be encountered in successive pregnancies, or whether the woman, "after many trials, ought not to submit to the Cæsarian operation as the means of preserving the child at the risk of her own

life," applies to this question of inducing abortion. Let me quote the argument as stated in my "Obstetric Operations": "The conduct of the woman is assumed to be culpable, and we are assumed to be in the position of accomplices in her fault if we repeatedly relieve her. But are we entitled to take upon ourselves the office of the judge? Are we to make ourselves the ministers of justice? Vengeance, punishment is not ours. When did Medicine ever withhold her merciful hand from the degraded, the sinful, the criminal? Shall we dare to put a mere vegetative life—that of an embryo—into the scale against that of a being like ourselves accountable to the Almighty? Can we take upon ourselves the awful weight of deciding that the wretched woman was wrong—criminal in becoming a mother? She is subject to her husband. If punishment is due, must it fall upon her, and are we to inflict it? I cannot, therefore, hesitate in expressing my conviction that we should be traitors to our trust if we were to perform the Cæsarian section when craniotomy (or induction of abortion) is safer for the woman, because in our judgment she was culpable in becoming a mother."

To sum up this part of the case, we may decide, provisionally, that in the case of a woman with a conjugate under 2.50 inches, bearing a live and viable fœtus, it will generally be right to perform Cæsarian section; and that where pregnancy has not attained the viable stage, abortion should be induced.

Another question is, How to act when the conjugate measures 3 inches or more—too narrow to allow a mature fœtus to pass with life. Here we may temporize until the fœtus is viable, say until seven months' gestation, and then induce labor. Skilfully done, this gives the best chance for the two lives—certainly better for the mother, and probably as good for the fœtus as could be expected from the Cæsarian section. And it is the mother's right to turn the scale in her favor when there is a doubt.

Lastly, I repudiate the imputation that I am the apologist for craniotomy against Cæsarian section. Each proceeding has its proper application, and in particular cases we are bound to consider which is to be preferred. It has become the fashion of late to accept without reserve the dogma that forti-

cide, done for the purpose and with the high probability of saving the mother, is murder. May it not be said with more justice that to encounter the serious risk of matricide, with the doubtful hope of saving the fœtus, is near akin to murder?

There are two sides to the question. They are not incompatible. But, just as in the question between autogenetic and heterogenetic puerperal fevers, there are minds which cannot hold two ideas, although both may be true.

ROBERT BARNES,

JANUARY, 1890.

15 HARLEY STREET, LONDON.

AXIS TRACTION FORCEPS.

TO THE EDITOR OF THE AMERICAN JOURNAL OF OBSTETRICS.

DEAR SIR:—I beg leave to state that Dr. Edward Reynolds, in his criticism, has not enlightened me upon any points in relation to Tarnier's forceps with which I have not been already thoroughly familiar. I desire to thank him for calling my attention to Dr. A. H. Smith's article containing an illustration of Hubert's first model, which I had never seen. His second model is the one figured, in the works I have examined, as his instrument. I find, however, that it is not at all the same instrument, and not identical in construction, although at first glance somewhat similar in general appearance, to the one which I described. Dr. A. H. Smith speaks of "Hubert's with its various forms of firmly fixed lever prongs," while the instrument which Dr. Reynolds says is "entirely identical both in principle and construction" is Simpson's popular instrument, with the addition of two adjustable handles fastened by a French lock, which may or may not be used, as desired. Hubert's first model could not have been portable, and may have failed for that reason. A short time ago I saw it stated in one of the journals that Tarnier's forceps had been condemned by the Paris Obstetrical and Gynecological Society on account of its many disadvantages. I am certain not one per cent of the phy-

sicians of this city use them. Having received some inquiries by mail, I wish to state that the instrument I described has been made by Tiemann & Co. and W. F. Ford, of New York.

Yours very truly,

T. J. MCGILLICUDDY, M.D.

TRANSACTIONS OF THE NEW YORK OBSTETRICAL SOCIETY.

Stated Meeting, November 19th, 1889.

The President, J. E. JANVRIN, M.D., in the Chair.

Presentation of Specimens.

"SOFT" FIBROID OF THE UTERUS; HYSTERECTOMY.

DR. J. R. GOFFE.—The specimen is one of fibroid of the uterus which I removed on Saturday last. It is the first of the kind which I have seen, being what I would call a soft fibroid. The uterus lay in front of the tumor, anteflexed, behind the symphysis, while the tumor rose as high as the umbilicus. The diagnosis of fibroid of the uterus having been made, I removed the entire mass (including the tumor, uterus, and appendages) by abdominal section on Saturday afternoon, with the assistance of Dr. Dudley and Dr. Latham. The pedicle was disposed of according to the method which I believe has been described a number of times before this Society by Dr. Dudley. I first attempted to do the operation described by Dr. Stimson—tying each vessel of the broad ligaments to begin with—and remove the entire uterus with the tumor; but I finally abandoned that procedure, left the cervix as a pedicle, transixed it, and covered it in by a flap which I dissected off from the anterior and posterior surfaces of the tumor.

The woman was 35 years of age; had been married ten years; had never borne a child; had submitted to posterior section of the cervix uteri for sterility five or six years ago, but without result. She first noticed this tumor last May; it was then just perceptible. A physician was called, who told her she had a tumor. He examined her also just before the operation, and said it had increased four or five times in size since May. When I operated it extended up to the umbilicus, and was removed because of its rapid growth and nervous symptoms. There was no marked pain which could be attributed directly to the presence of the tumor, nor had she had hemorrhage.

Regarding the operation, I may say that this is the fourth time I have performed it during the past eighteen months. The first three patients made a very good recovery. The present patient had a temperature at four o'clock this afternoon of 101° F., the highest she has had. It is the custom at the end of the fourth or fifth day, since the stump and particularly the ligatures are apt to be the seat of a slough, to dilate the cervix and drain through the vagina. That is the method which I adopted in the

other three cases, putting in a cervical tube, which allowed perfect drainage down through the vagina. In them the ligature came away; in one on the ninth day, in another on the fourteenth, and in the other at the end of the fourth week. Thus all the tissue beyond the ligature sloughs off and drains down through the cervix and vagina. I intend to dilate the cervix to-morrow in this case, and expect to get a discharge of pus and eventually discharge of all the sloughing tissue. The recovery is more rapid than one might suppose, in view of the fact that the stump sloughs. The three previous patients were all up by the end of the fourth week, one at the end of the third week. In the latter case the ligature came away on the ninth day, and all the discharge had ceased and the patient was able to walk from the bed to the chair at the end of the third week. I would ask whether the form of fibroid presented is familiar to the gentlemen present. It has not yet been examined by the microscopist.

DR. A. P. DUDLEY.—I have seen but one, possibly two, fibroids of the uterus which had the same appearance as the one presented. Those I saw in general hospitals a good many years ago. This tumor seems to be a fibro-cellular growth; it does not seem to be all fibroid. It is well worth being examined by the pathologist.

As Dr. Goffe has stated, I assisted at the operation, and probably have seen the patient since the hour he mentioned. She is doing exceedingly well. Dr. Goffe did not mention the size of the vessels which fed this growth. The vessels of the pampiniform plexus had increased in size nearly as large as my finger, and fed the tumor with an enormous amount of blood.

Regarding the operation, I can only confirm what Dr. Goffe has said of it. I have described the method before. I think time will show that it is a good one. Dr. Goffe has had four and I have had four successful cases. As to Dr. Stimson's method, it appears much easier to ligate the vessels of the broad ligament separately when it is talked about at medical societies than it is to do it when you have your fingers in the abdomen, especially if there is much fat. For that reason Dr. Goffe abandoned Stimson's method, and had to quilt the broad ligaments before he could stop hemorrhage. It is difficult to describe the operation which was done so that it can be readily comprehended. It should be understood that at its completion there are no ligatures in the abdominal cavity; they are in the pelvic cavity, and extra-peritoneal. Being outside the abdomen, they come down through the cervix after sloughing, in the way Dr. Goffe has described. All that remains in the pelvis after removal of the large fibroid is a single row of cat-gut sutures across the top of what is left of the broad ligaments in covering the stump or cervix. I think it has this advantage over Stimson's method, that peritoneal and intestinal adhesions are not as likely to follow; there is no danger of prolapse of the intestine or hernia. If pains are taken to have the bowels move within twenty-four hours, I do not think there is as much liability to intestinal adhesions as where there is a granulating surface in the pelvis.

This particular case, it seems to me, might possibly in the first place have been amenable to electricity. I do not know, however, but what the patient had been subjected to it. The tumor was so well supplied with blood vessels that, unless the electric current had some peculiar effect in diminishing their size or blood supply, I should not think the mass would become much smaller under its use.

To dilate the cervix on the fourth or fifth day after the operation, instead of putting in a cervical tube when the operation is first performed, seems to me to have an advantage. It is quite difficult to pass a tube through the canal after one has ligated the stump and cut it short, and keep it there or retain it in such a position that it will not make upward pressure on the flap and endanger the peritoneum. Sometimes the flap is quite thin, and a lit-

the pressure might be dangerous. The rise of the temperature is a sufficient guide to the insertion of the drain. Expecting pus to appear at a certain time, we allow it to escape before the patient is at all in danger. We place her in Sims' position, dilate the cervix, and wash out the cavity. I hope the gentlemen who have heard of this operation will try it. I shall continue with the method in preference to Bantock's or Schroeder's, by which the pedicle is left in the abdominal cavity. I think there is danger in dropping the pedicle; that it has resulted in patients dying of septicemia from sloughing of the pedicle above the ligature. But where the ligature is buried beneath the peritonium, as in the operation I have described, no such risk of septic peritonitis is incurred.

Dr. A. M. JACOBUS inquired whether they had found it necessary to administer an anesthetic when they dilated the cervix to introduce the drain.

Dr. GOFFE replied that he had found this procedure almost painless, for the tissues had softened down and yielded very readily to the steel dilator. The tube which he inserted was one borrowed from Dr. Janvrin, and formerly employed by Dr. Peaslee as a cervical speculum while making applications to the interior of the uterus. It constituted an admirable drainage tube. The end was open and blunt, and had three perforations on the sides. There was no danger of its transfixing the flap which covered the stump, and it allowed of free drainage. He had thought of using Outerbridge's wire cervical dilator. The principal object was to effect free drainage.

HIGH AMPUTATION FOR CANCER OF THE CERVIX.

Dr. J. H. FRUITNIGHT presented the specimen, with the following history:

Mrs. K., æt. 33, had one child ten years ago; no miscarriages. Contracted gonorrhea from her husband soon after marriage; has had leucorrhea and uterine distress ever since, and been treated by various physicians at



Diagrammatic figure of epithelioma of cervix (anterior lip).

intervals. During the past year she has had frequent uterine hemorrhages. Shreddy substances have passed, but no marked fetor has been present. Within the past few months has become emaciated, and a characteristic

cachexia is present. Four weeks ago she consulted Dr. C. E. Young, of this city, with whom later I saw the case. Examination revealed the appearance shown in the accompanying diagram. The growth or excrescence was on the anterior lip, and extended upward on the inner surface nearly to the internal os. The mass, though quite firm, bled easily on touch. As the neoplasm seemed to be confined to the cervix and was entirely accessible, the operation of amputation was deemed preferable to the more formidable one of hysterectomy.

The operation was performed on November 6th last by means of the wire *écraseur*. After amputation, the stump was trimmed with the scissors and scraped with a curette up to the internal os. The remarkable feature was the very little hemorrhage which occurred. After the oozing was stanchd, styptic cotton was applied. In a few days an application of zinc chloride was made to the cervix. Six days after the operation the slough came away *en masse*, unaccompanied by hemorrhage, and in twelve days from the operation the patient was up and about. Several sections of the growth were made and examined by Dr. F. G. Kneer, who reported as follows: "The specimen is undoubtedly cancerous. The epithelial nests show very distinctly, as do also the alveoli."

DR. H. J. BOLDT.—Opinions differ so widely at the present time regarding the therapeutic measures best to adopt in cancer that one has considerable difficulty in choosing a course in any particular case. Statistics have shown that vaginal hysterectomy in the hands of an experienced operator is just as free from danger as high amputation of the cervix. In looking at the diagram and specimen presented, and considering the operation performed, it seems to me impossible to say that in this case all the diseased tissue has been removed. I wish to put myself on record as being opposed to an operation of that kind where the disease has been positively diagnosed. Unless the disease, epithelioma of the cervix, is in a very early stage, I do not think any benefit is to be derived from amputation. We know that in epithelioma of the cervix there is more likely to be a return of the disease in the cicatricial tissue at the vaginal vault than there is in cancer of the body. If we get the case in time, total extirpation of the organ is the treatment to adopt, and I repeat that it is not attended by any greater danger than is partial extirpation. There is a considerable number of cases now on record of patients having been observed seven or eight years since the operation, and no return has taken place. I am entirely opposed to the operation adopted in this case.

DR. E. H. GRANDIN.—I think Dr. Boldt's remarks will hold very well for the expert. Vaginal hysterectomy in the hands of those who have frequently performed it may be considered a relatively simple operation nowadays; but in the hands of those who have never performed it, it is one of the most, if not the most difficult operation in the whole range of gynecological surgery. High amputation of the uterus, on the other hand, cannot be considered a very difficult operation, provided the operator remembers the anatomy of the parts. The results of high amputation, if performed under the conditions that Dr. Boldt has stated as calling for vaginal hysterectomy, are certainly as good as those from vaginal hysterectomy. Such cases are on record, notably those of Dr. Baker, of Boston. According to his last report, which appeared about two years ago, eight years had elapsed in one case after high amputation, and the patient was still living; one was four years free from recurrence, and another three years. I have yet to read a series of results showing many cases remaining free from recurrence, after vaginal hysterectomy, a longer period than two years and a half. The reports which I have read, and the cases which I have observed, show recurrence generally within two years. In view of the fact that vaginal hysterectomy is an operation requiring more technical skill and experience than

high amputation, and in view of the fact that many women with carcinoma uteri cannot go to an expert for treatment. I would like to put myself on record as claiming that where the disease is limited to the infravaginal portion of the cervix, and has not extended, so far as one can tell, into the surrounding tissues, high amputation will give as good results as general hysterectomy, and certainly cannot be called as dangerous an operation.

DR. BOLDT.—I cannot let the remarks of my friend Dr. Grandin go entirely unchallenged. I would ask him what was the exact condition in the case in which Dr. Baker operated, the patient remaining free from recurrence eight years. It was, no doubt, one of those cases in which the disease was taken in hand very early. But in cases like the one illustrated in this diagram, I doubt whether it is sufficiently early for that operation. Where the disease is met with sufficiently early, I grant that high amputation is a proper operation to perform. But I make this demand where high amputation is chosen, that the cut surface in the line of amputation be examined microscopically to see whether any evidence is present of diseased tissue having been left. When there is absolutely no evidence of disease present in the cut surface, then I say that amputation may be proper; but until that examination has been made, I do not think it is justifiable to let the patient go on with high amputation.

DR. GRANDIN.—Dr. Boldt has those of us who favor high amputation at rather a disadvantage. He demands that the cut surface in the part removed be submitted to the pathologist for examination. I am not in a position to demand that that portion of the woman left behind after total removal of the uterus be submitted to the pathologist, unless she dies. The point which I wish to lay stress upon is that where the disease is in its early stage, not having extended beyond the internal os, as far as we can tell, high amputation in the hands of the majority of gynecologists, and in the hands of all excepting a very few, will give as good results for the woman, perhaps not as brilliant results for the surgeon, as vaginal hysterectomy.

DR. A. P. DUDLEY.—I think there is a middle ground to be taken in the discussion between these two gentlemen. It is this: The doctor's patient was a young woman. Now, epithelioma starting in the cervix of a young woman is of rapid growth, and in cases in which high amputation has been performed the return has been quicker than in patients past the menopause. That is readily understood when we consider the greater activity of the vessels in these parts in the former class of patients. Then, of course, there is liability to return in the lymphatics of the pelvis when these have become affected—just as great a liability, in fact, as there is to return in the stump after hysterectomy. In one case in which I operated I obtained a post-mortem, the woman dying, unfortunately, of acute suppression of urine. I found the lymphatics of the pelvis and those of the intestines impregnated with little foci, and in the chyle duct was a collection of glands as large as a bubo. I think, then, that we ought to make a distinction with respect to the age of the patient. I think that in some of the cases in which Dr. Baker obtained such marvellous results, careful examination might have shown that they were only cases of hyperplastic cystic degeneration of the cervix, with granular erosion. In such cases there are present nearly all the appearances of epithelioma, there are round cells and cells of different forms, and it is pretty hard to make the diagnosis. In the Woman's Hospital we see such cases, in which there are all the appearances of epithelioma of the cervix, yet careful examination of some of the tissue when removed has proved in many of them that the disease was not malignant. I should say, then, that in young women, in whom the disease springs up rapidly, high amputation is not the best procedure. I should prefer to make high amputation in an older woman than in a young one. We cannot, I think, make a definite rule which shall govern us in all cases. We must be guided in each instance by the age and disposition of the patient and the advance of the disease. I think that high amputation and hysterectomy are both excellent operations, but both can be abused. But in young women I would say every time, extirpate the uterus rather than make high amputation.

THE PRESIDENT.—The remarks just made by Dr. Dudley meet with my

approval *in toto*, especially as to the age of the patient. In all young women, those under thirty-five years of age, having the amount of disease shown in this specimen, I would certainly perform vaginal hysterectomy. As bearing on this particular case, another statement may be made, based on the diagram presented—namely, that the operation was not really that of high amputation. Baker's high amputation cannot be performed by the écraseur, at least as I understand it. It can only be done by the scissors or knife. Judging by the appearance of this specimen, I should suppose that a good deal of diseased tissue yet remains in the patient's cervix. A high amputation necessitates going up considerably above the internal os. Commencing at the junction with the vaginal mucous membrane, a very large, wedge-shaped portion is taken out, extending half an inch, or even more, up into the uterine cavity itself. That, as I said, can only be done by the knife or scissors. I would certainly watch this case very carefully indeed, were it mine, and on the first appearance of any disease I would proceed to perform vaginal hysterectomy.

DR. A. P. DUDLEY.—I have a very small specimen, but it carries a very large result. The members may remember that at the last meeting, in discussing Dr. McLean's case, I spoke of two cases of my own in which there was

A SINUS EXTENDING UP FROM THE LOWER ANGLE OF THE ABDOMINAL INCISION AFTER LAPARATOMY.

My friend Dr. Wylie advised me to dilate the sinus and pick up the ligature which he thought must undoubtedly be lying at the bottom. I wish he was here to-night. It was on the 21st of last May that I operated upon the patient from whom the first specimen presented came, removing a double pyo-salpinx, relieving adhesions behind the uterus, and fastening the organ up by attaching it with silk to the anterior abdominal wall inside. The patient did well, having but slight elevation of the temperature, not more than what could be accounted for by a little suppuration in the lower angle of the wound which started about the seventh or eighth day. On the third or fourth week she got up and went home, but the sinus or suppurating point remained. She came back to my clinic twice a week during the summer, and I touched the sinus with everything possible that might stimulate granulation and cause it to heal, but without avail. The patient gradually lost ground, had difficulty with the bowels, and became very despondent and wanted to enter a hospital. She was admitted to the Post-Graduate Hospital a week ago, and I tried to dilate the sinus, as Dr. Wylie had suggested. With the dilator I stretched the external sinus, and went down with a small artery forceps to pick up the ligature. After searching for it three-quarters of an hour, and causing considerable hemorrhage, this method was abandoned, and I opened the abdomen for the second time. I found the ligature here presented after a while, but that was of minor importance. I present the specimen for the purpose of making this point—namely, that one is working entirely in the dark and knows not what he is doing when he goes poking around for a ligature at the bottom of a sinus two inches and a half deep in the abdominal cavity. So I found in this case; for the whole anterior surface of the bladder proved to be glued to the incision below, where a cavity had formed holding two ounces of straw-colored fluid, which led me to think that I had perforated the bladder and permitted its contents to escape. Part of the omentum was bound down in the scar,

the intestines were matted into a mass, and there were three sinuses leading into the intestine. Two were in the ileum, about three-quarters of an inch apart, larger than a buckshot. The whole posterior surface of the uterus and sigmoid flexure of the colon were bound together, except in the line of the sinus which ran down about a finger's length behind the uterus. This organ had freed itself from the abdominal walls, to which I had attached it by the silk suture, and had become shrivelled to about two inches and a half in length. The sigmoid flexure was bound both to the fundus and entire back portion of the uterus and to the abdominal wall. I curetted the sinus, removing a large amount of degenerated tissue, split up the funnel-shaped union between the two portions of the ileum, and stitched the two sinuses leading into the gut. In obliterating the principal or third sinus, I formed a row of over-and-over catgut sutures, making a half-curve about five inches in length, extending from the left horn of the uterus down into the cul-de-sac and up on the sigmoid flexure.

Although there was considerable oozing of blood, and the operation lasted two hours and a half, yet the patient stood it well. In order to give the large sinus the best possible chance to heal, I was obliged to allow the sigmoid flexure to draw up into the position it had occupied.

The operation was performed last Thursday. I began moving the bowels at the end of the first twenty-four hours, and succeeded in causing them to move efficiently by administering half a Seidlitz powder every four to six hours. The highest temperature which she has had is 100° F., which occurred to-day. There is not the least tympanites; she has had no morphine; the bowels have moved regularly. The slight rise in temperature is due to a little pus in the line of the old scar, where a good deal of tissue had to be cut away. I did not expect to get union throughout by first intention, and I think the temperature is to be accounted for by the flush around the visible wound. The patient certainly has no tenderness, nor tympanites, or other local symptoms pointing to peritonitis.

I report the case as demonstrating that although you may go down and fish for a ligature, and possibly find it at the bottom of a sinus, yet you cannot say that there is not other trouble, perhaps graver trouble, present than that which you have removed, and which will call for an operation a second time.

I think Dr. Wylie said that a ligature of silk will disappear within sixty days, yet the one now presented was inserted the 21st of last May and shows no appreciable change. I have another in my pocket, which was removed the fifth week after insertion; it also seems to be of full size. I should certainly take exception to the statement that silk will disappear in the abdominal cavity within sixty days, or even one hundred days. It may become encapsulated, but it certainly will not be absorbed in that length of time.

I still claim that the reason for suppuration when silk is used is that in passing it through to make a pedicle, in cases of pyo-salpinx, it becomes impregnated with pus; that it is not due to septic matter introduced with the silk for want of aseptic precautions. This pus, coming in contact with the ligature during its passage through the pedicle, sets up suppuration and prevents it from becoming encapsulated. On the other, the left side in this case, I could distinctly feel the ligature encapsulated in the broad ligament.

I have still another case with a sinus, in which I can pass a probe some distance downward and forward in the line of a sinus following an operation for double pyo-salpinx, and I feel sure that the ligature is at fault. I have already made a second laparotomy upon that patient, and I would prefer to make a third one to dilating the sinus and poking around at a depth of three inches in the abdominal cavity for the silk ligature, which is undoubtedly covered by fungous granulations.

DR. RALPH WALDO then read a paper

ON THE CLINICAL FEATURES OF PYO-SALPINX.¹

DR. A. H. GOELET.—Regarding the treatment of pyo-salpinx by electricity, I may say that I do not think Apostoli's method is well understood in this country. I should not expect improvement to result from the use of the negative pole in the vagina in a case of pyo-salpinx. I should rather expect the patient to grow worse. Apostoli says distinctly that here the positive pole is indicated. The negative pole is irritative and is contra-indicated. It seems to me, therefore, that in this country sufficient stress is not laid upon the difference in action of the two poles. In pyo-salpinx Apostoli does not make vaginal applications. His applications are intra-uterine, the positive pole being employed; commencing with a small dose, gradually increasing it as the inflammatory symptoms subside. Then, if the case does not yield, he punctures the vagina, perhaps not more than a quarter or half a centimetre in depth, but sufficient to produce a decided effect by the current on the accumulation. With regard to the use of the hypodermatic needle in the vagina for diagnostic purposes, I agree with Dr. Waldo that it is not a wise procedure. But the method which I have suggested for using the aspirating needle where the tumor is found to be fluctuating in the vagina, emptying the sac and washing it out with an aseptic solution, and then employing the positive pole through the canula, is perfectly harmless. The action of the current along the line of puncture is such that no chance of absorption of pus is given. This is not the method adopted by Apostoli. He only makes puncture. I merely mention this circumstance because Dr. Waldo said the hypodermatic syringe is dangerous in connection with these cases. But with regard to electricity, there is no question but that the majority of cases can be very much benefited by its use according to Apostoli's method. The current used must be positive. There is an inflammatory condition, and here the negative pole is not indicated. I am inclined to believe that the positive pole used in the uterine canal produces much more benefit than galvanism used through the vagina.

DR. J. H. GUNNING.—Regarding the action of electricity in tubal disease, I may say that four cases were treated by me in which the diagnosis had been made by the learned men at the Woman's Hospital, who said to each patient that she would have to undergo an operation before she could get well; indeed, that an operation was an absolute necessity. The thought of an operation frightened them away. But they finally came into the clinic outside. The use of electricity was discussed, and it was decided to try it. In those four cases I employed the electricity differently from what we have heard to-night: I used the negative pole of the galvanic current in the vagina. First, however, I used the faradic current as strong as it could be borne, followed by such massage of the tubes as caused the expulsion of the pus into the uterus and vagina. The negative pole of the galvanic current then applied through the vagina seemed to have a peculiarly curative effect. Two of the four women so treated are now pregnant, second or third month, and the other two are improved. Dr. Grandin, I think, has also had some experience with the use of the negative pole in the vagina in cases of this kind. I hope electricity will be more generally used, so that fewer women need have the abdomen opened and the uterine appendages removed. In one case I controlled gonorrheal inflammation by the nega-

¹ See original article, page 295.

tive pole of the galvanic current used within the vagina, and a strong faradic current to cause contraction and expulsion of the contents of the tumor.

DR. R. A. MURRAY.—I am extremely pleased with the paper. It brings up a subject which has often been discussed here. While listening to the reading of it I tried to recall the different theories which have been advanced here in explanation of the cases with which it deals. We all remember the time when every collection of pus within the pelvis was thought to be due to pelvic cellulitis. We then came down to where it was thought that some collections of pus might be due to pelvic peritonitis and yet be within the cavity of the pelvis. Then another point was arrived at—locating the pus in the tubes and not in the pelvis at all, although it was not denied that there might be exudation around the tubes. Then it was asserted that cases in which a cure had been effected were not cases of pyo-salpinx at all, but simply cases of hydro-salpinx. Finally we have come to a point where I believe most all of us are agreed that there may be cases in which, the tubes being closed at the uterine extremity, the external opening is occasionally forced apart by the distention of the tube, pus escapes, and recurrent attacks of pelvic peritonitis result. Or, the tube actually rupturing, its contents escape and form an abscess in the pelvis, with the supervention of acute peritonitis. These cases demand laparotomy. Others, in which no such escape of pus from the tubes takes place, demand treatment by other methods, as electricity, tampons, counter-irritants, and so on, according to whether the case is acute or chronic.

I think that all of us, on recalling the condition seen in many cases after laparotomy, and the many patients we formerly treated for conditions exactly similar to those for which later laparotomy has been done, must come to the conclusion that there ought to be a way in which women can be prevented from the development of pyo-salpinx in the first place, and a way, in cases in which it has developed, to effect a cure without mutilating the patient. I think it is an opprobrium to surgery that mutilation is regarded as the only remedy. During the last two years I have very carefully examined all my cases of pelvic inflammatory exudation, acute or having existed some time, to determine why it is that some cases get well and others go on and never get well unless an operation is performed. I must admit that the cases which got well were not more frequently due to what we term catching cold than to gonorrhea. I have seen case after case of gonorrheal salpingitis recover, while cases which had no such origin went on to the formation of pus, and eventually even, to save the patient's life, demanded laparotomy. I have tried in the latter class of cases to find some good reason for their existence, and have come to the conclusion that, as far as can be determined without going more minutely into the pathology of the broad ligaments than I have done, the cases may be divided into about three sets: 1. There are a number of cases which seem to be due mostly to the puerperal state, and which are purely septic. In these cases the tubal ends are occluded by adhesions, the exudation is large, the tubes are much distended, yet they seldom burst unless there be direct traumatism of some kind. Those cases are chronic, date from some puerperal period a distance back, and can only be cured by an operation. 2. A class in which we can determine that there is tubal inflammation, and even the existence of pus; but the pus contents can be forced into the uterus, the uterine end of the tube being patent, and in that way a cure can be effected. In those cases I have thought that the tube remained nearly in its normal position, that it did not descend downward and backward behind the uterus, and consequently the pus could escape into the uterus. I think the reason why such cases get well is not that we relieve the inflammation, but, as stated, that the tube is in such a position that its pus contents can escape. 3. In the third set of cases of pyo-salpinx the tube is displaced and fixed, the uterus is fixed, the internal opening of the tube may be patent and some of the pus escape through it, but usually it is closed. The external opening, if not patent all the time, is certainly so sometimes, for we see relapses and new attacks of pelvic peritonitis, which can be demonstrated to be due to the extrusion of pus from the tube. It is in these cases in which the tubes are displaced

that rupture takes place, the reason being, I think, that there is the fixation in a bad position—a position in which the concussion of the abdominal organs forces the uterus on the tube, stretching it and causing laceration of its walls.

The symptoms vary greatly in these three classes of cases. The author has described those of two classes, and I will not take your time to further discuss that side of the question. But I should like to know how far these observations coincide with those of other Fellows, especially regarding the cure of pyo-salpinx, with or without operation. I think that if we would remember these distinctions we would find that the cases calling for an operation are limited within narrow bounds—cases, at least, in which we can say positively that an operation is the only resource. Without this knowledge we may take out many tubes and ovaries which would otherwise get well. I have observed many cases in hospital and private practice in which patients who had had pus in the tubes afterward became pregnant—cases even in which there had been a history of repeated attacks of gonorrhœa. The patients have not only become pregnant, but have gone through the puerperal state without any septic trouble whatever. That is one of the best evidences that pyo-salpinx sometimes does disappear; for if there had been pus in the tubes in these women during the puerperal state, it is likely they would have developed septic puerperal trouble.

DR. H. J. BOLDR.—I think Dr. Murray has struck the keynote as to why some cases of pyo-salpinx get well. There is no question but what they do. In embryonic life, as Freund, of Strassburg, has demonstrated, the tubes have spiral twists, produced during their descent, which are subsequently effaced, and towards the age of puberty the calibre of the tube is straightened. In some cases, however, these spiral turns fail to entirely straighten, and consequently there remains more or less occlusion of the tube; and it is in these cases that suppurative disease, or in fact any disease, is likely to develop and not be cured. Freund has gone so far as to claim that all cases of salpingitis in which the tubes are patent recover. I do not believe it; but that is his statement. I believe that a certain number of cases of pyo-salpinx will get well without an operation, but I believe, on the other hand, that if one can satisfactorily demonstrate that a woman has pyo-salpinx in the *active* state he unjustly exposes her to risk if he does not operate. Dr. Gœlet has made some remarks about the treatment of these cases by electricity. I should be very glad if he would show me some which he has cured in the manner he has mentioned, by puncturing the tube through the vault of the vagina and washing it out. I am a little doubtful about the propriety of treating cases of pyo-salpinx in that manner. It seems to me a dangerous procedure to puncture the vault of the vagina, and it ought not to go forth from this Society unchallenged. Now, Apostoli has reported only one case in which there was pus evacuated for several days after puncture; but that does not at all prove that the case was one of pyo-salpinx. It may have been one of hydro-salpinx in which suppuration developed afterward. But that is only one case. I do not think this Society should sanction such treatment.

At one time I was under the impression myself that in all cases in which gonorrhœa was the cause of the salpingitis it must necessarily be a pyo-salpinx. But that was a great error. Since then I have seen case after case of gonorrhœal salpingitis which proved to be no more than a severe inflammation without the formation of pus. An intense catarrhal inflammation of such origin, however, may go on and become suppurative. But that it should primarily be suppurative is not always the case. I should like to ask Dr. Gœlet how many cases he has treated in the way he has described. With regard to treatment of suppurative tubal disease by massage, I think one cannot be too guarded in its use. I would advise you not to try it.

DR. E. H. GRANDIN.—I think the Society can congratulate itself on hearing the conservative paper read to-night, and on the discussion following it. If there is one department of gynecology in which conservatism is needed, it is in abdominal surgery; yet this is the first meeting for years in which the keynote has not been to open the belly and take out the tubes if you sus-

pect trouble. The one case of Dr. Waldo's, and those reported by Dr. Gunning in which women with tubal disease have not only recovered from it but have conceived afterward, make positive the fact which I have always claimed as true, that it does not follow because a woman happens at some time in her life to have tubes and ovaries which to the touch appear to be structurally diseased, she must, for that reason alone, be sterile. I am satisfied that many women have had their tubes and ovaries removed when, if they had been left and the operator had had the patience to resort to those methods of treatment which are at our disposal, they would have had at least one child and not have been made sterile. It is just as rational to remove the testis because a man has had an epididymitis as it is to remove at once a tube, or both tubes, because of the suspicion of pyo-salpinx. I say the suspicion. I have always said that where there is ample evidence of pus; that where, on bimanual palpation, tense fluid tumors are found posterior to the uterus, and where the woman has given a history of recurrent attacks of pelvic peritonitis, I have always claimed, and still claim, that in such a case the best thing for the woman is to open the abdomen and take out what will inevitably be found to be tubes filled with pus. But remember the point I make: These tumors must be behind the uterus. If they are not behind the uterus, if they are lateral, then it is possible that resort to electricity (although personally I have never accomplished what Dr. Gunning has accomplished with it), or the tamponade, hot douche, counter-irritation by galvanism or blisters, may cause these tubes to empty themselves into the uterus, and the woman may afterwards conceive. As to cases where we find by careful bimanual palpation, with or without an anesthetic, simple enlargement of the tube or ovary, or distinct induration in the neighborhood of the tube and ovary, I contend to-night, as I have always contended, that laparotomy is not called for until every other possible method of treatment has been exhausted. According to my experience, in ninety per cent of the cases I am now speaking of, the women can be restored to a state of functional usefulness. They may not be cured, the physician may know that they are not cured because the induration still exists, but their pain has disappeared, they menstruate normally, they are able to undergo the sexual act without discomfort, they get fat, they can dance, and they are better off with their tubes, although they are embedded in adhesions, than they very frequently are when their tubes have been removed. We have all seen cases with the latter result in women who have been operated upon for salpingitis—I will not say which form—and have turned up months or years afterward complaining that, instead of having been relieved, they are worse off than before the operation.

A few words more. About five years ago a woman consulted me for recurrent attacks of pelvic peritonitis; at least the history which she gave suggested recurrent attacks of pelvic peritonitis, although I never saw her in the midst of such an attack. On examination the uterus was found adherent, retroflexed, and an exudation on both sides. She had been to one or more clinics in this city, and had been told that nothing short of laparotomy and removal of the tubes and ovaries would cure her. I was unable to make up my mind that that woman had pus in her abdomen, and counselled against laparotomy. I treated her largely by galvanism, the positive pole internally, the negative, large electrode on the abdomen. In six or eight months she was practically a well woman. So far as she knew, she was well. The day before yesterday I curetted her uterus for incomplete miscarriage. That is another case which proves that a woman may have bilateral disease of the tubes and yet recover and conceive.

DR. H. L. COLLYER (*present by invitation*).—I may mention a case which Dr. Dudley will remember having examined at the clinic, that of a married woman who gave birth to a child eight years previously, and as a result of bad management at her confinement the uterus became retroflexed and fixed, and both ovaries and tubes were enlarged. She was treated for some time at the clinic with boroglyceride tampons and iodine. I subsequently treated her with galvanism, using the negative pole inside and the positive pole outside. After several treatments, extending over six months,

I used faradism. She expected her menses in December last, but from that time they did not appear, and a few months ago I delivered her of a healthy child. That is another case which shows that a woman who has had salpingo-ovaritis partially cured may give birth to a child. I have also another case in mind, in which the patient, who had been married several years, contracted syphilis, had retroversion to about the second degree, with disseminated salpingo-ovaritis: the tubes and ovaries could be made out very distinctly. She also had been treated with iodine and glycerin tampons for some time, and I think it was about two years since that she gave birth to a child. She had been examined by Dr. Grandin, and the diagnosis of salpingo-ovaritis was made. Those are two cases in my small experience in which women with undoubted salpingo-ovaritis bore children.

DR. MALCOLM McLEAN.—It is gratifying to a conservative old foggy to sit here and hear the discussion take this turn. It is rather a sudden turn, inasmuch as for many months, and I may say for several years, I sat here and heard but one opinion expressed regarding purulent salpingitis. I can only congratulate the doctor on the hearty reception his paper has received. I can indorse the views expressed in it and those of others who have spoken to-night. I have been guilty of treating patients in this way several years, and felt my guilt in curing some, inasmuch as they had been told that they could not get well without removal of their tubes.

DR. DUDLEY.—I was rather surprised to hear Dr. Grandin say that for years the war-cry had been to take out the suspected tube. I also think he does not want the remark to go into print that you might as well remove an epididymitis as a pyo-salpinx or salpingitis. There is no comparison whatever between the two. One is without the body. You seldom see a pyo-epididymitis; you frequently see a pyo-salpinx as the result of inflammation. But the remark also bears fruit in this—it is evident that gonorrhea does not always result in pyo-salpinx. While it is true that you seldom see pyo-epididymitis, yet epididymitis is almost always the result of gonorrhea. I believe in conservatism always in these cases. I believe that a good many of the cases spoken of to-night as cases of pyo-salpinx were not pyo-salpinx at all. I have never yet opened a woman's abdomen where I did not find it justifiable to remove what I went after. But I have found the distinction Dr. Grandin has made between the form of tubal disease which allows of the escape of the pus into the uterus, the tubes being parallel with the fundus of the uterus, and another form in which the pus cannot escape, the tubes being down in the cul-de-sac. But in every case of old-standing pyo-salpinx which has come under my care—and I may say they have been due more commonly to miscarriage than to any other cause—the tubes were perpendicular to the sides of the uterus, the ovary being dragged down with the tube and in almost all cases diseased. In all of those cases, or at least in ninety out of one hundred, the fimbriated extremity of the tube is occluded by being glued either to the pelvic contents or the ovary. I would ask, Can the gentlemen cure those cases with electricity? Can they remove the adhesions with electricity? Can they separate the adhesions between the fimbriated extremity and the ovary by that means? If they cannot, they certainly cannot cure the patients—they simply alleviate their sufferings. I think we ought to make a distinction, such a distinction as Dr. Murray and Dr. Grandin have made in these cases, and not cry operation in every one. There are very few cases of salpingitis which come for an operation. They are cases of pyo-salpinx, of a nature which you cannot mistake if you will make a careful diagnosis. They will always give you a clear history, extending back for years. They date from a miscarriage badly managed or some other puerperal condition. They occur more frequently in married women subjected to miscarriage than in prostitutes who have gonorrhea. There are cases which can be treated by electricity, but in them the tubes are on a level with the fundus uteri. I have treated by other than operative methods a pyo-salpinx in which an ounce of pus was discharged from the tube. I am treating at my clinic every month cases of distinctly enlarged tubes in women in whom we would not suspect gonorrhea, but who give a history of miscarriage. If, however, there is a salpingitis, with

the tube perpendicular to the uterus, the fimbriated extremity down in the cul-de-sac, the patient at every menstrual period suffering from pelvic peritonitis, such cases demand an operation. And we do operate and cure them. You cannot clear the tube of pus in such a case as that, because you would have to squeeze it up-hill. In most instances the uterine end of the tube is closed. If the gentlemen can cure cases of that kind with electricity, I will fall in line with conservatism.

In conclusion Dr. Dudley mentioned the case of a woman who gave a clear history of pyo-salpinx, but refused an operation. It ruptured, but she recovered nevertheless. He had given up hot douches largely where they could not be carried out carefully in the manner described by Dr. Emmet.

DR. GOELET.—Replying to Dr. Boldt's question, I may say that, according to my memory, I have treated twelve or thirteen cases in the manner which I mentioned. I showed one case to Dr. Dudley on Saturday last. The pouting was posterior to the cervix: the tube was certainly prolapsed. I withdrew an ounce and a half of pus. Since Dr. Boldt has questioned my veracity on this point, I may say that the only evidence I have in that case is that of the nurse and patient having seen the pus which was removed. The aspiration was made eight months ago, and there has been no refilling of the tube since, and the patient is in good health. I may have selected my cases, it is true, for I do not believe in going away up into the pelvic cavity to aspirate a tube which is horizontal to the fundus of the uterus, but I do aspirate those through the vagina which can be felt fluctuating down in the cul-de-sac. I see no more danger in this procedure than in the old-fashioned method of aspirating an abscess. The instruments are rendered thoroughly aseptic, the positive pole of the galvanic current is turned on through the canula, and thus the walls in the line of puncture are cauterized and rendered thoroughly aseptic. This small orifice remains for drainage into the vagina subsequently until the cure is effected. I repeat that I can see no objection to treating the tube in this manner. Although my experience has been limited to twelve or thirteen cases, yet thus far I have had no unfavorable results. There has been no refilling of the tubes. I will make this proposition to Dr. Boldt or others: Having formed a connection with the Hudson Dispensary, I am willing to treat in this manner any case sent me, and let who will judge of the result. Heretofore my patients have all been in private practice.

DR. BOLDT.—I did not question for a moment Dr. Goelet's veracity. I said I should like to see cases cured in that manner, but that I would not like to have the treatment go out with the apparent indorsement of this Society until it has been further investigated. The doctor says now that the tumors were posterior to the uterus, in Douglas' cul-de-sac.

DR. GOELET.—Yes, in all of them the fluctuating tumor was felt in the vagina.

THE PRESIDENT.—I would like to take exception to one remark which Dr. Grandin made, that it has been the custom of this Society to indorse the opening of the abdomen when one suspects enlarged tubes, and remove them. Now, I do not think that has been the custom of this Society. Quite a number of gentlemen have presented a great many tubes here, and undoubtedly have operated in many instances where many other members would not have ventured, and the latter have on many occasions criticised the propriety of operating in those cases. Dr. Lusk, for instance, has done so frequently. So have I and a good many other members. Therefore I do not think Dr. Grandin's remark is wholly correct. If Dr. Grandin's idea was that the Society would indorse abdominal section to find out what is present when one suspects enlarged tubes, and removal of them if they be found diseased, I think that is a view which the Society would fully indorse.

DR. GRANDIN.—Your criticism, Mr. President, would be eminently just if I did so express myself. What I wished to state, and what I am willing to have go on the records—Dr. Dudley to the contrary notwithstanding—is that for years back the chief cry in this city has been laparotomy if the tubes and ovaries were supposed to be diseased. In other words, the tendency has been to follow the dictum of that great man in Birmingham, and I am glad

that the paper and the discussion to-night have taken an opposite tack--a tack which I hope will be followed until the extent which laparotomy has been resorted to in the past few years will have been forgotten in the large number of cases that will be recorded as cured or markedly palliated through conservatism.

THE PRESIDENT.—As Dr. Grandin has just expressed himself, I think we fully agree with each other. I believe that the same views are held by a greater number of the members of this Society, and that when an abdominal section is made, and no evidence of diseased tubes is found, the operator should retreat, leaving the operation simply an exploratory one.

DR. DUDLEY.—I would simply add that I have seen laparotomy performed in a number of cases in which the tube seemed to be enlarged, yet it was found to be of normal size, while the tissues around were enormously enlarged and infiltrated. I think cases of that kind would account for impregnation taking place apparently after cure of a pyo-salpinx. Electricity might cause absorption of the perisalpingitic condition, the tube remain pervious, and impregnation take place.

DR. WALDO, in closing the discussion, said: With regard to galvanism, it was not my intention to bring it very forcibly before the Society this evening. I simply stated that it is an agent which I have used extensively in gynecological practice. I have used sometimes the negative pole, sometimes the positive pole, within the vagina, and it has seemed that I have obtained rather better results from the negative than from the positive pole. I use mild currents in these cases for some time--ten, fifteen, or twenty minutes. Regarding puncture, I should not care to puncture a pyo-salpinx with anything, either with or without galvanism. Possibly there are cases in which a slight rupture of the tube takes place, pus escapes slowly and forms an abscess, behind the uterus, which points in the vagina. I might in such a case as that think of puncturing. But to puncture a pyo-salpinx ordinarily, in any way whatever, I strongly oppose, especially if the tube is high. I might resort to the method if the tube were low.

There is one point which I tried to lay stress upon in my paper--that is, salpingitis due to gonorrhea. I do not believe that in such cases there is ordinarily pus; I believe that often it is a catarrhal salpingitis; and I should let time elapse, treating the patient by other methods, before resorting to measures specially appropriate where there is pus—I mean particularly removal of the tube.

Regarding massage, I agree decidedly with Dr. Boldt. I do not find cases in which I should like to resort to it. I should think of it where there was evidence that the uterine end of the tube was open, or only so slightly closed that a little pressure would cause the pus contained in the tube to escape through the uterus. But I do not believe in performing massage as a rule.

I agree with Dr. Grandin pretty fully, and believe that Dr. Dudley agrees with him, too, for in listening to their remarks I observed that both are in favor of removing tubes which are markedly distended with pus, especially if one can feel fluctuation and has every reason to believe that there is pus which cannot escape through the uterus. I take it that that is the position of both these gentlemen, and it is also my own. I am very much pleased to hear the conservatism expressed to-night. I do not wish to put myself on record as opposing removal of the tubes in properly selected cases, but I do most emphatically oppose the indiscriminate removal of them. I have seen, and I think most of us have seen, any number of tubes removed where, with the most careful examination, we were unable to see anything wrong with them. Possibly the microscope might have detected some change, but at the time of the operation no change was visible to the unaided eye. I do not now speak of cases in which the tubes were removed for most obstinate dysmenorrhea, but only where the tubes were felt apparently enlarged before the operation, and the patient had had gonorrhea or some condition leading to the suspicion of salpingitis.

Stated Meeting, December 3d, 1889.

The President, J. E. JANVRIN, M.D., in the Chair.

DR. H. J. BOLDT presented two specimens, the first being

A SARCOMATOUS UTERUS REMOVED BY THE COMBINED METHOD.

The patient was about 42 years of age; had complained ten years of pain in the pelvis and back, and for the past few months had had excessive flow. The uterus was enlarged, and behind it was a fluctuating tumor. Scrapings of the uterine mucosa revealed round-celled sarcoma. The combined operation was performed, and the pelvic tumor, a pyo-salpinx, was first removed through the abdominal opening, the uterus being afterward taken out by the vagina. This latter step was exceedingly difficult because of the small size of the vagina, large size of the diseased uterus, and infiltration of the broad ligaments. The duration of the operation was about two hours. It was doubtful whether the patient would recover.

The second specimen was one of

CARCINOMA UTERI REMOVED BY THE COMBINED METHOD

from a woman, 47 years of age, who had during the past three or four months been bleeding profusely. The uterus was shown to be carcinomatous before the operation, but the patient also complained of abdominal pains, on account of which the operation was partly exploratory. Nothing was found, however, which would certainly account for these pains, although they might have been due to a circumscribed thickening of the omentum which was present. In this case also the operation was rendered extremely difficult by the marked infiltration of the broad ligaments, etc., and required as much as an hour and a half for its completion. It was noteworthy that in both instances the bladder was injured—an accident which was likely to happen in all cases in which there was such infiltration of the broad ligament that the uterus could not be readily brought down, and where one was compelled to work high up in the vagina, endeavoring to loosen the vesical attachments. A permanent catheter was placed in the viscus at once, and each case, as far as the vesical injury was concerned, did very well.

At a recent meeting he had presented a specimen from a case in which this operation had been done in less than half an hour. It would be seen that its duration would vary greatly according to the greater or less difficulty encountered in its performance. He added that his last patient was doing very well.

DR. BUCKMASTER inquired of Dr. Boldt what made him feel sure that the perimetritis was not due to extension of the malignant disease.

DR. BOLDT replied that his confidence was based on the fact that the malignant disease in the uterus, according to the microscopical examination, was just in its beginning. In the first instance, also, the sarcoma was confined within the limits of the serous covering of the uterus.

DR. WALDO asked how far the disease extended on the cervix, and added that from what he had seen of these cases he was led to think that where the cervix was involved up to the vaginal vault, although the vagina itself showed no disease, the disease would invariably return after removal.

DR. BOLDT said it was for that reason he had taken a part of the vagina, away with the uterus.

DR. WALDO thought there would be a return, say within two years, even though a portion of the vagina was included in the operation.

DR. BOLDT was satisfied that in all cases of malignant disease of the cervix there was more apt to be a recurrence than when the disease was limited to the body at the time of operation. As Dr. Waldo had remarked, there was likely to be recurrence within two years when the disease involved the cervix, and therefore he included a part of the vagina in the tissues removed.

LARGE, THIN-WALLED CYST FREE IN THE PERITONEAL CAVITY.

DR. GEORGE M. TUTTLE.—I present a specimen, not for its inherent value, but because I am curious to know whether any of the members have seen anything like it. The case is one I operated upon this afternoon. The woman gave a pretty direct history of gonorrhea occurring two months after an abortion instrumentally induced. There was acute specific vaginitis, with inflammation of the vulvo-vaginal glands forming an abscess on one side; a thick, purulent, acrid discharge, followed by attacks of peritonitis and constant abdominal pain on the left side. These symptoms were accompanied by a change in the type of menstruation, which became more free. It seemed there had been direct extension of the inflammation from the uterus into the tube on the left side, perhaps also on the right, although nothing was revealed by bimanual palpation on that side.

When I opened the abdomen, this curious-looking gelatinous mass was seen filling the pelvis and lower abdomen. It was so soft that it broke in several places on being touched, allowing perhaps a quart of slightly viscid, serous-like fluid to escape. About an equal amount remained in the sac when lifted out of the pelvis. On passing the hand down, it was found to spread out and surround the uterus on both sides. Other similar smaller cysts were present, but broke under manipulation. At the posterior surface of the uterus were small, bead-like cysts like the one presented, but they did not seem to have any close connection with the broad ligaments. If the cysts originated in the broad ligaments, they had become separated, and lay free among the intestines in the lower abdomen and pelvis.

The left tube contained an ounce of pus; the right one was thickened and tortuous, and under the microscope showed interstitial salpingitis in its most beautiful form anatomically considered. The appendages were removed on both sides.

DR. BUCKMASTER said he had seen malignant disease of the omentum which gave rise to a number of cysts of smaller size than the one presented, but similar in appearance as regarded color and thinness of walls.

THE PRESIDENT asked Dr. Tuttle whether he had any knowledge of the date of origin of the cyst masses.

DR. TUTTLE replied that the girl had been well prior to her abortion in 1888. No examination had been made prior to her admission into the hospital. Replying to Dr. Waldo, he said there was no distinct pedicle to the tumor or cyst.

DR. BUCKMASTER asked whether the fluid was sticky, and added that it did not look like the fluid of a parovarian cyst.

DR. TUTTLE said the fluid seemed somewhat sticky.

The specimen was referred to the pathologist for examination.

SARCOMATOUS GROWTH OF THE LABIA THE SIZE OF AN ORDINARY ORANGE.

THE PRESIDENT presented a tumor, about the size of an ordinary orange, which he removed from the right labium of a woman, about 40 years of

age, who entered the Skin and Cancer Hospital some three weeks ago. He first saw her in June, when the growth was about two-thirds its size when removed. It involved both labia, was freely movable, its outer surface solid to the touch, but being evidently cystic within. There was also a small, wart-like excrescence on the left labia minora, which bled slightly. He removed this, and on the other side made an incision through the mucous membrane and enucleated the cyst, tying a small pedicle on its posterior surface. The sac was then trimmed off. The examination showed that it was a sarcoma, and he presented it because of its rarity in this location and the size to which it had attained. The woman's health had not deteriorated, and she felt only slight inconvenience from the growth while walking.

DR. BOLDT thought it was one of the peculiarities of sarcomata that they were not likely to give rise to any symptoms except slight inconvenience. It was only during the late stages that such growths told on the general health or feelings of the patient.

DR. BUCKMASTER—I show an

ASEPTIC LIGATURE JAR.

All its parts are of glass—jar, cover, spindle, etc.—and it is hermetically sealed. The silk is passed through a rubber cork by a round-pointed needle. The cork is placed in the glass cover from the inside, the bevel of the glass being adapted for this purpose. In it I have placed waxed silk which has been soaked in wax just short of the boiling point for twenty-four hours. The silk is braided, as this form of silk retains the wax in its meshes better than that which is twisted.

Dr. Buckmaster carried also some tape with which to ligate the cord, in this jar. The necessary length could be drawn through the cork without unsealing the jar. He added that it was not necessary to draw the waxed ligature so tightly as the unwaxed. When drawn too tightly it was likely to cut the tissues.

MODIFICATION OF APOSTOLI'S PAD ELECTRODE.

DR. A. H. GOELET exhibited the pad, which was made of potter's clay, about the consistence of putty, rolled out to the required diameter and thickness, having thin zinc upon the back surface, the whole covered with absorbent cotton and sewed up in linen, the back being finally covered by rubber to prevent soiling of the clothing. The advantage of the cotton was that it would keep the clay constantly moist for a week. Protected by the rubber, it remained moist a month. He kept different sizes.

Dr. Goelet also showed his

STEEL-PROTECTED ELECTRODE.

intended to take the place of platinum, which was more expensive.

He further exhibited his

MODIFICATION OF THE SIMS SPECULUM,

which he said could be used with greater ease in office and ordinary work. It remained in position when not retained by the hand.

DR. E. L. H. MCGINNIS had used Dr. Goelet's modification of Apostoli's pad with great satisfaction. It was clean, remained moist, was pliable,

and seemed to do its work well. The point made by Dr. Massey at a recent meeting of the Section on Obstetrics and Gynecology of the Academy of Medicine, to cover the pad with soap, seemed, as tested in two cases, to be a good one, for the patients were able to withstand about twenty-five milliamperes more than without it, with the same degree of pain and discomfort. It was applicable, he presumed, to Goelet's pad as well as to Apostoli's. With regard to the steel, or iron treated by hydrogen, electrodes, he thought they might be made better than at present. In some instances he had noticed a roughening of them after use, which he did not think was favorable.

DR. GOELET said the electrodes were made for him by Mr. Roe as a favor, and while they were not as good as the platinum electrodes of Apostoli, yet they cost only a fraction as much, and some of them were not affected in the manner Dr. McGinnis had described. They had remained perfectly smooth after being used a number of times.

DR. MCGINNIS further explained the purpose of the marks on the carbon electrode of Apostoli. They indicated the depth in the uterus at which the cauterization was taking place, and acted as guides in touching the entire surface.

(To be continued.)

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF CINCINNATI.

Meeting of September 12th, 1889.

The President, GEO. E. JONES, M.D., in the Chair.

DR. J. L. CLEVELAND introduced the subject of

SOME DIFFICULTIES SURROUNDING THE DIAGNOSIS OF PREGNANCY.

and reported the following illustrative case:

Was first called to see the patient under consideration in June, 1888. Found a woman 35 years old, the mother of four children, very small, emaciated and anemic to a marked degree, and weighing about seventy-five or eighty pounds. She had given herself up to die, and her friends supposed that she would not recover. When I first saw her, judging from appearances, I supposed that her illness was necessarily a fatal one, whatever might be the cause, and that I was only called in to see the last act of the tragedy. She had been under the care of two competent physicians, one as attendant, the other as consultant. The symptom that called for treatment was uncontrollable vomiting. The case had been thoroughly examined and discussed by the physicians in attendance. While they had not made a positive diagnosis, they had concluded that most probably she was suffering from gastric ulcer or catarrh. It had been about two months since she had menstruated. Pregnancy had been considered and eliminated as impossible under the circumstances. I considered the case as most unpromising. Her appearance was such as to suggest malignant disease or the last stage of consumption. She had no cough, though her emaciation was extreme. Her bowels were constipated obstinately; whatever she ate produced pain, nausea, and vomiting. She loathed food of all kinds, and only forced herself to take it as an effort at self-preservation. There was no tumor about the abdomen or in the region of the stomach. She had never vomited blood, but only glairy mucus. The fact should

be considered, when my diagnostic ability is weighed, that I saw the patient some four weeks after pregnancy had been eliminated as impossible by her former physicians, and that in this time changes had taken place in the uterus. An examination per vaginam, digital and bimanual, gave me very little positive information; all that could be determined was that the uterus was somewhat enlarged, which could be easily determined, as the woman was so thin. This, connected with the fact that she had been regular up to two and one-half months previously, suggested the *possibility* of pregnancy. Though the conditions were such that pregnancy seemed very improbable, the emaciation was too extreme for phthisis, for it is rare to find a case of phthisis in the last stage where it is so pronounced.

Acting upon this hypothesis, treatment was instituted, though hardly with any hope of doing good, as at this period of the history of the case I could not rid myself of the idea that there was some concealed malignant disease, most probably of the stomach or general tuberculosis, though, as I have stated, there was no fever. Her diet was carefully watched. Koumiss was found to be retained better than anything else, and this was largely depended upon for nutrition. Fowler's solution in gtt. i. doses and ingluvin were given in connection with her food. This general course of treatment was kept up for about three weeks, when her stomach began to be more tolerant of food. The gradual increase in the size of the uterus and the softening of the os made the diagnosis of pregnancy more probable, and in the course of two more weeks a positive diagnosis was arrived at by finding the fetal heart. Notwithstanding the extremely reduced and emaciated condition of the patient, she gained strength rapidly, and the pregnancy terminated favorably, both to mother and child, January 15th of this year. The point of special interest to me in this case was in finding pregnancy where it seemed to be so *very* improbable.

DR. REAMY regarded the suddenness of cessation of menstruation as a very important symptom, giving rise to a suspicion of pregnancy. It is a very rare thing for a woman to menstruate regularly and then suddenly cease, this cessation being due to pulmonary consumption. The quantity and character of the flow might be modified, but the suddenness with which it ceased and the great emaciation due to the vomiting were enough to arouse strong suspicion of pregnancy. The first examination in the case presented eliminated pulmonary disease. As this, then, was no complication, the emaciation was not of much consequence as a cause for absence of menstruation. The sudden amenorrhea was of more importance than the simple fact that the woman did not menstruate.

To establish the diagnosis of pregnancy in the early months, the speaker described one method of examination which often helped him out when other signs were wanting. Place the woman in a position somewhat akin to that employed for obtaining ballottement. Let her lean gently forward, while standing in front of the examiner, resting her hands gently on the latter's shoulders. If the palmar surface be passed into the vagina anteriorly to the womb, this organ may be felt enlarged in a transverse direction. In this way he also succeeded in getting the motion of the child at later periods when the fetal heart could not be heard.

DR. PALMER said that cases of pregnancy, intra and extra-uterine, occur so much more frequently than we might suspect that it is ever prudent to be on the alert for the existence of such a possibility. As a proof of the frequency of extra-uterine pregnancy, it is well to call to mind Formad's experience. In a number of autopsies made in Philadelphia over a period of four months, he found nineteen instances of extra-uterine pregnancy where it had not been suspected.

The peculiar conduct of recent menstruations is strongly indicative of either disease, local or general, or pregnancy; when pathological its cessation is slow and gradual; when physiological its cessation is abrupt. At least this is the rule, though there are exceptions. Again, menstruation, although pregnancy exists, may continue as regularly irregular as before conception. Such a case has been recently under my care. Pregnancy was not at first suspected, because the mammary glands were not enlarged, there was no disturbance of the stomach, and menstruation had appeared, since its inception, twice at intervals of two months; but without any provocation an abortion in the third month of utero-gestation took place. The greatest doubt exists in extra-uterine pregnancy prior to the sac rupture, especially in the tubular variety.

In early pregnancy the speaker had depended upon the detection of the peculiar *shape* and *position* of the uterus, in addition to the structural changes in the infravaginal cervix. The *prolapse* of the first and second months, the increasing *anteversion* of the third month, are valuable aids; and long before Hegar had written of the balloon-shaped uterus of early pregnancy, he had digitally noticed this change in shape, always most noticeable when the patient stands. Besides, the pulsation detected in the anterior cul-de-sac, with the changing shape and position of the uterus, was very significant, as was also the violet color of the vaginal mucous membrane at the same time.

DR. W. H. TAYLOR cited the expression of Jonathan Hutchinson, who said: "Happy is the man who has learned always to suspect pregnancy!" The frequency of unsuspected pregnancies is well illustrated by the examples mentioned by Vander Veer in a recent paper of seventy-five cases in which laparotomy was performed and pregnancy existed when it was not suspected. It is singular that in so many instances physicians should be so confident of the purity of the women that they do not think of pregnancy before proceeding to operate. It seemed to the speaker if any person was to undergo so important an operation as abdominal section, she should be always examined first per vaginam. He concurred with the first speaker, that with a sudden suppression of menstruation, followed by vomiting, the probability of pregnancy was always very strong. Tuberculosis, even in the advanced stage, does not extinguish sexual passion; on the contrary, it is said to sometimes increase it; hence we cannot assume that debility would exclude the possibility of conception.

DR. WENNING said that although we know that sudden cessation of menstruation, and morning sickness or vomiting, are the first two links in the chain of evidence in favor of pregnancy, certain difficulties due to antecedent irregularities or accidental complications may obscure the diagnosis. Certain women are very irregular in their menstrual function, whilst others may suffer from some gastric disorder which precedes or continues during the supposed pregnancy, thus rendering the symptom of vomiting per se valueless. The sudden arrest of menstruation ought always to excite suspicion, but where the possibility of conception is not admitted or positively denied, as in the unmarried, the diagnosis in the early stage becomes very difficult. Some cases are of such a nature that it becomes almost criminal to put the question to the patient. The speaker then cited a number of examples where the difficulty of diagnosis was very great, but especially called attention to the following case: A young married woman who had already borne a child came to him to answer the question of a second pregnancy. When asked regarding her last menstruation, she replied that of late she had menstruated regularly, and *therefore* supposed herself pregnant. As this statement was thought to be a slip of the tongue, the question was again put, but she replied in the same way, giving the additional information that she had always been irregular in menstruating prior to her first pregnancy. During this time she menstruated, however, regularly until her child was born. After this, during lactation, menstruation again ceased until a few months ago, when she again became regular, and for this reason supposed herself pregnant a second time. She was quite surprised to learn that cessation of menstruation is the rule during pregnancy.

DR. CLEVELAND, in concluding the discussion, added that in the case reported by him the chief complication was the irritability of the stomach, which existed before the menstruation ceased.

Meeting of October 10th, 1889.

The President, DR. GEO. E. JONES, in the Chair.

DR. E. W. MITCHELL read a paper on

THE MEDICAL TREATMENT OF DYSMENORRHEA.¹

DR. PALMER, speaking of the excellence of Dr. Mitchell's paper, noted the judicious suggestions made for treatment, and said: We can very properly divide the varieties of dysmenorrhea into the *neuralgic*, the *inflammatory*, the *mechanically obstructive*, and the *membranous*.

In my paper read before the American Gynecological Society in Philadelphia some six years since, I wrote concerning the frequency and invariable presence of the neurotic element in all cases of dysmenorrhea, the constant hyperesthesia of the endometrium in the region of the os internum and the uterine fundus—a condition especially prominent in the neuralgic form. I also spoke of my personal experience with two medicines in neurotic cases: the tincture of *actea racemosa* and the tincture of *pulsatilla*. The former is especially indicated in cases with rheumatic histories, the latter in cases purely neurotic. Another remedy occasionally efficacious is the tincture of gelsemium in five-drop doses every three hours. Glonoin (nitro-glycerin), in a half to one drop dose of a one per cent solution, will be found to be beneficial when the heart's action is weak, the peripheral circulation weak, and the extremities cold. Antipyrin is sometimes highly beneficial.

We cannot purely localize the effect of the application of electricity, even if it is in the faradic form. The galvanic form is more generally useful. We may do good in neurotic cases by the application of the galvanic current to the exterior of the pelvis, to the spinal cord, to the general sympathetic and to the splanchnic system of the sympathetic. Neffel in a monograph wrote of this matter some twelve to fifteen years since.

The most potent influence of galvanism in dysmenorrhea is noticeable when it is locally employed, with the positive pole applied intra-uterine and the negative either abdominal or sacral—used, of course, only during the menstrual interval and for its curative effect.

The speaker had not used manganese, but could easily understand how, like iron, it would do good, especially in cases in which the menstruation was scanty as well as painful. Under these circumstances he usually administered iron, in the form of the dried sulphate, during the menstrual interval. But if the flow was profuse or prolonged, he always gave arsenious acid with quinine instead.

The mechanical theory was largely originated by McIntosh, who made use of dilatation. It was favored by Sims, but discarded by Emmet, who claimed it was a myth. In a certain sense all forms of dysmenorrhea are mechanical. Thus in the neuralgic form there is probably always more or less spasmodic contraction of the circular fibres of the internal sphincter of the uterus; in the inflammatory form there is some obstruction from a swollen endometrium; in the membranous there is obstruction from the exfoliating endometrium, to say nothing of cases dependent upon version, flexions, congenital or acquired stenoses of the cervical canal.

Small doses of the bichloride of mercury, given three times a day for a long time, are probably the very best remedy we have for the medical treatment of membranous dysmenorrhea.

He would say naught concerning dilatation of the cervical canal by tents, bougies, or steel dilators, because it would be entirely foreign to the subject of the medicinal treatment of dysmenorrhea.

DR. STANTON said one cause of failure in the treatment of dysmenorrhea

¹ See original article, page 259.

was due to the supposition that it was a disease instead of a symptom. We must recognize different conditions, all causing this one symptom. We must attack the cause of the disease; measures to relieve pain are only palliative. The mechanical theory of dysmenorrhea is properly becoming gradually exploded. If we consider the very small amount ordinarily lost during the menstrual period, covering a period of four days, there must indeed be a very perfect closure to prevent the passage of so small an amount of blood as is usually secreted. The speaker thought a great deal of abuse had come from the doctrine of Sims, Barnes, and others, attributing dysmenorrhea in the majority of instances to some mechanical obstruction. Too much operative treatment is responsible for the development of pelvic peritonitis, pus tubes, etc. Many cases yield better to medical than surgical treatment, but the latter must be appropriate. Anodynes, as opium, chloral, etc., may become necessary if the disease is severe, but they should be avoided if possible, especially if the dysmenorrhea persists for a long time. The bromides, Hoffmann's anodyne, and other similar agents are less objectionable. Apioi is of good service where the flow is scanty.

DR. WHITE regarded dysmenorrhea hardly amenable to treatment, except two forms of it, the neuralgic and hyperesthetic. In the neuralgic variety he used pulsatilla, but in addition to this the electric current; the former before, and the latter during the attack. The ordinary preparation is worthless, but the green or German tincture of pulsatilla, given in two or three drop doses a few days before, is followed by marked relief. The electric current acts instantly. It must be understood, however, that there is no organic lesion; if such exists, the case must be treated mechanically. The speaker thus treated two young ladies recently, in whom there was no lesion except very great pain on the passage of the sound through the cervix.

DR. REED said he would not deny the efficacy of drugs, especially in the nervous forms of dysmenorrhea. Pain at the internal os is one of the main symptoms, which gave an erroneous idea to Sims and his followers that this was a form of obstructive dysmenorrhea and hence treated wrongly by surgical means. This tender patch of mucous membrane is significant in some cases. A case of hay fever was lately referred to him by a prominent laryngologist, on account of marked dysmenorrheal attacks which accompanied the hay fever. The paroxysms of asthma came on just previous to the menstrual flow and disappeared with the latter. On account of the striking analogy of the sensitive patches in the Schneiderian membrane, giving rise to reflex trouble, to the sensitiveness of the cervical mucous membrane in certain cases of dysmenorrhea, the speaker took the hint from the rhinologist, and acted upon the same principle by cauterizing the sensitive portion of the cervical mucous membrane. He took care, however, to keep the cervix dilated by hard-rubber cones until cicatrization had occurred. The result was satisfactory. He must admit that he had never been able to get satisfactory results from medical treatment alone. In many cases, although perhaps unapparent to the inexperienced, there is some organic lesion associated with this symptom. Where great boggiess of the fornix vagina exists, local depletion by glycerin tampons is often serviceable. A favorite prescription for internal medication was a compound pill of aloin, strychnine, and belladonna in cases where these remedies may be required.

DR. JULIA CARPENTER said success depended upon the method of using the various agents recommended for dysmenorrhea. She had very favorable results from the tincture of pulsatilla given in small doses, one drop three times a day during the interval, and, when the pain begins, one drop every fifteen minutes until relief is obtained. She had also tried apioi, but with little success. The faradic current, used as described by Dr. White, had with her never failed to banish the pain at once.

A method not as yet referred to, and not long mentioned in medical literature, is the suppression of the flow altogether in cases where the saving of that amount would be an advantage to the patient. She had tried this in some cases of delicate women, and the pain was entirely prevented, and that, with the saving of the loss to the body, had the happiest result.

One patient, whose whole strength seemed to go in this periodical strain of her system, said she was never well in her life before. The idea of this treatment the speaker got from Dr. Gehrung, of St. Louis. He mentioned it, however, only as a means to prevent so much loss of strength in feeble patients; she had seen no mention of it anywhere as a remedy for dysmenorrhea at the same time. She also used a more simple method than Gehrung's.

Still another means that often gives surprising results is a change of climate. She had had cases where, during a sojourn at the seashore or mountains, the patient would be perfectly well, and also where a removal to another State, or even simply from the city to the country, had permanently removed every difficulty.

DR. HALL indorsed Dr. Stanton's views. He was also of the opinion that dilatation of the uterus was practised too often; most practitioners do not select their cases properly.

He recently removed a pair of pus tubes caused by dilatation four or five years ago. Peritonitis had set in, with this termination. One tube contained an ounce of pus, the other a couple of drachms. A distinguished operator said that in one year he had operated on four or five cases plainly traceable to the use of dilators.

As regards cauterizing the cervix, as practised by one of the speakers, he preferred the treatment adopted by Bell, of Glasgow, for these cases, namely, curetting the mucous membrane. He regarded this preferable to a burn.

DR. CLEVELAND indorsed likewise the views laid down by the first speaker, but, if medical treatment included hygiene, he regarded this the best treatment of all. He did not believe there was any specific for dysmenorrhea, but he was convinced that the neurotic condition was one of the strongest elements in these cases. Dr. Carpenter's idea of dress, as laid down in a paper read before the Cincinnati Academy of Medicine recently, was entirely adopted by the speaker. Young girls should not wear heavy skirts, as they may produce this neurotic condition.

DR. RICKETTS said he had been unable yet to learn the causes of dysmenorrhea. Thus far only this symptom was discussed, and from the many remedies proposed he would not know where to begin in their administration. He would suggest that some one should write a paper more clearly defining the causes of dysmenorrhea and giving the remedy for each.

DR. ILLOWY desired to know if pulsatilla should be used at each menstrual period, or whether the administration for one menstrual time would be lasting after three or four periods.

DR. PALMER replied that a few cases were benefited at the start, as soon as the remedy was given; in others it had to be repeated during each menstrual period.

DR. MITCHELL, in concluding the discussion, said his paper was necessarily imperfect, because it was based upon a number of cases presenting only certain symptoms. He excluded the consideration of all local or surgical treatment, because his cases reported were all young girls without any such complications as ovaritis, flexions, etc. Cases requiring surgical treatment must be carefully selected; if dilatation is to be practised it should be done with perfect antiseptics, and there must be no peri-uterine disease.

From his observation, two classes of girls were especially liable to dysmenorrhea, forming the extremes of society: First, the daughters of wealth, who are sent to school early, have little healthy exercise, but keep up the dissipations of society, late hours, etc.; secondly, the girls of poor families, who are ill-fed, work very hard, and in addition have often inherited a weak constitution. The cases described in his paper were from both classes.

DR. REED reported a case of

PYO-SALPINX; EXTIRPATION OF APPENDAGES; RECOVERY.

The specimen shown was from a woman in whom there was a previous distinct history of gonorrhea. The specimen was only interesting as show-

ing the large size of some of these tubes, and the completeness of the occlusion at either extremity. On pressure of the tube for the purpose of forcing its contents, the walls yielded before the ends gave way.

DR. REED also reported a case of

OVARIAN CYSTOMA; CHRONIC EXUDATIVE SALPINGITIS; LAPARATOMY; RECOVERY.

Mrs. I., *æt.* 40, has been married for eighteen years. A few months after her marriage she conceived, but sustained an induced abortion at the third month of gestation. Following she had serious inflammatory trouble within the pelvis, the uterine discharge lasting for several months. She has since been sterile and she has been the victim of dysmenorrhea. During the intermenstrual period she has had considerable pain in both ovarian regions, but worse on the right side. She has also complained of marked sacralgia. On examination I found tumefaction above either fornix, but more marked on the right side. The uterus was anteflexed. Owing to marked tension of the abdominal walls, the bimanual was not satisfactory.

October 17th, with the assistance of Dr. Johnston, I practised forcible dilatation for the relief of the anteflexion. While the patient was under an anesthetic, the abdominal walls became so relaxed that I could easily distinguish the right ovary to be about the size of a mandarin orange. I at once advised abdominal section, which was done a week later at St. Mary's Hospital with the assistance of Drs. Jones and Johnston.

The right ovary was found to be cystic, containing quite three ounces of fluid. The ovary, with the Fallopian tube, occupied a position beneath a thick deposit of organized exudate. Enucleation was, therefore, a matter of extreme difficulty, and gave rise to a considerable hemorrhage. The appendages on the other side were also functionally destroyed by the products of inflammation. The specimens present the foregoing characteristics, and immersed in water show the extent and character of adhesions. The drainage tube was removed on the fourth day. The case has now recovered.

DR. REED finally reported a case of

RUPTURED SUPPURATING OVARIAN CYST; OVARIOTOMY; DEATH FROM CARDIAC FAILURE.

Mrs. N., *æt.* about 60, came under the observation of Drs. J. and F. H. Chitwood, of Connersville, Ind., in the middle of May, 1888. She gave a history of an abdominal enlargement beginning on the right side and extending gradually upward, the trouble having been first noticed about eighteen months previously. She had always been a "free liver," taking some alcohol almost daily for a number of years. There had early been manifest disturbance of the hepatic function. As a result her first attendant diagnosed the case as one of cirrhosis with consequent ascites. The theory was not in the least inconsistent with the ovarian trouble, which latter was largely masked by the ascitic complication. The result was that the ovarian trouble received no attention until the date alluded to. At that time the patient was very weak, and had an abdomen that was simply enormous. She weighed over three hundred pounds before the operation.

June 2d, 1889, with the assistance of the Drs. Chitwood, I did ovariectomy. Fifty-seven pounds of fluid having the characteristics of ovarian fluid were

removed from the abdominal cavity. Low down in the pelvis was found the remnant of cyst which I show you. It had evidently been ruptured for a considerable time, some of the remaining tissue being soft and diffluent.

The case had an embarrassed circulation, evidently from fatty heart, from the first, and, although she regained consciousness, the cardiac failure was progressive, resulting in her death within fifty-six hours after the operation.

TRANSACTIONS OF THE GERMAN GYNECOLOGICAL SOCIETY.

SECTION XVIII. OF THE SIXTY-SECOND ANNUAL MEETING OF GERMAN NATURALISTS AND PHYSICIANS.

HELD AT HEIDELBERG, SEPTEMBER 18TH, 19TH, 20TH, AND 21ST, 1889.

The Section organized on Wednesday, September 18th, 1889, under the chairmanship of Prof. Kehrler (Heidelberg), who welcomed the delegates. Hegar (Freiburg) was elected President.

First Session.

MARTIN (Berlin) presented several specimens:

HEMATOMA OF THE TUBE.

Behind the uterus, which was not enlarged, and on the right side there was a tumor the size of an egg which had caused hemorrhages for a long time. The curette showed the mucosa of the uterus to be normal. Probable diagnosis, tubal pregnancy. Laparotomy was performed, and an adherent tubo-ovarian tumor quickly removed; recovery. The tube contained a subperitoneal hematoma which communicated with the lumen at but a single point; at this point alone Martin found chorionic villi; he believes that most cases of tubal hematoma are really extra-uterine pregnancies.

VAGINAL HYSTERECTOMY FOR PROLAPSUS.

The extirpated uterus had been removed from a woman some fifty-odd years old. Hemorrhages had existed since her thirtieth year and had finally become continuous. The vagina and the greatly enlarged uterus were prolapsed. The curette showed glandular endometritis. A prolapsus operation appeared hopeless. The vaginal total extirpation was difficult on account of the size of the organ. The mucosa was in an acute inflammatory condition, but there was no malignant degeneration. The vaginal prolapse recurred.

VAGINAL HYSTERECTOMY FOR PROFUSE HEMORRHAGES.

Repeated curetting had only shown glandular endometritis. The uterus was enlarged and adherent. After the ligaments had been ligated, the cervix tore off, the body of the uterus disappeared behind the intestines and

was freed with difficulty. The hemorrhage was arrested and the patient recovered. The uterus contained a myoma the size of an apple. The mucosa was in a state of carcinomatous degeneration reaching almost to the myoma, which was not affected. A microscopical preparation was also exhibited.

HYSTERECTOMIES FOR MYOMA.

A large myoma was present in the body of the uterus; another one, the size of an egg, in the cervix. The patient was pregnant in the fourth month. Severe symptoms of oppression. Laparotomy; removal of the uterus after application of an elastic ligature; then enucleation of the cervix. Recovery.

Another large irregular myoma shown, which had reached down to the pelvic floor, was from a sterile woman who had suffered from profuse hemorrhages, attacks of violent pain, vesical and rectal tenesmus, vomiting, and peritoneal irritation. Laparotomy; the entire uterus was removed; recovery. The specimen showed a very large cystic myoma, glandular interstitial polypoid endometritis.

Martin is of opinion that unfavorable results after the intraperitoneal treatment of the pedicle of the stump of a myoma are due to leaving behind the cervix with its fungi, and therefore removes the entire uterus. His results were not good with Freund's operation, nor with that performed in two sittings. At present he amputates the body of the uterus first (elastic ligature). Then, while an assistant distends the fornix vaginæ from below, he opens it from the abdominal wound, detaches the ligaments on both sides with facility, and lastly frees the bladder, which has never been injured. The sponge which, while the sutures are inserted, is placed in the abdominal cavity, is saturated with disinfected oil, which, by covering the intestinal loops, prevents adhesive peritonitis.

LOEHLEIN (Giessen) has recently operated on two cases of hemato-salpinx, in one of which certainly no chorionic villi can be demonstrated, and in the second the presence of the latter has not been positively proved. He had had a case similar to Martin's third, in which, after observation extending over a year, carcinoma finally appeared, though repeated earlier curettings had shown only chronic inflammatory conditions. Total extirpation was followed by cure.

W. A. FREUND (Strassburg).—In connection with Martin's first case, I beg to report in advance the case of tubal pregnancy which is on the list as a separate paper. Within a comparatively short time the opportunity offered three times to remove gravid tubes for an acute indication, on account of abdominal hemorrhage. In the first two cases the diagnosis was confirmed, since Von Recklinghausen found the ovum by careful search. The third case was that of a multipara who, after five weeks' cessation of the menses, collapsed with the symptoms of extreme anemia. Laparotomy showed that the source of the hemorrhage was the right tube, which was removed, as well as the left, whose external end had an olive-shaped distention the size of a bean. Von Recklinghausen demonstrated that the right tube had been perforated by a very early ovum in a state of myxomatous degeneration. One-third of it was within an oval, smooth-walled opening; the rest was contained in the tubal cavity close to the maternal part (serotina), sprinkled with apoplectic foci. I do not know, though I have a dim recollection, that a case of myxomatous degeneration of a tubal ovum has been before described. The principal importance of the case lies in the fact that it throws light on a cause of rupture or perforation hitherto

unsuspected. As I have shown in the paper on tubal diseases in "Volkmann's Sammlung klinischer Vorträge," thus far the infantile tube represents the only cause of rupture depending on the mother which has been anatomically demonstrated. Every one of the three cases recovered without any reaction.

KEHRER.—Recent investigations have shown that fatty substances do not prevent the occurrence of adhesive peritonitis. Collodion seems to give good results.

HEGAR.—Aside from the introduction of septic matters, adhesive peritonitis is due to firm compressive dressings and the exhibition of opium and morphine. On the second or third day defecation and passage of flatus are secured by enemata or cathartics. As regards carcinoma, too much weight must not be attached to the anatomical examination. It seems as if beginning carcinoma might be cured by simple abrasion of the mucosa, perhaps even spontaneously. Special study should be directed to the etiology.

ON OPERATION FOR COMPLICATED UTERINE PROLAPSUS.

W. A. FREUND (Strassburg).—Since I have communicated my views on the etiology, prognosis, and treatment of prolapsus in "Gynäkologische Klinik" (Lesions of the Vagina and the Perineum, etc.), I have gathered additional experience on this subject by examinations of Douglas' pouch. This passes through an extra-uterine course of development by which it becomes ever flatter: while in the new-born it reaches as high as the middle of the vagina. This flattening goes hand-in-hand with the changes in position and shape of the other pelvic organs. Douglas' pouch is fastened to the semicircle of the retractors and at the rectum about the level of Kohlrausch's fold. The bottom of the pouch is fastened by loose connective tissue to the surrounding structures. These relations permit a free alternating mobility of the uterus and the rectum. The differences of opinion of authors about prolapsus with reference to the depth of Douglas' pouch, its participation in the prolapsus, and its enclosing intestines, are well known. It appears to me that some clinical observations indicate that, in general infantile arrest of development of the pelvic and abdominal organs, a deeply distended Douglas' pouch furnishes a disposition to hernial depression, and furthermore, especially under unfavorable conditions, to prolapsus of the pelvic and abdominal organs. Such a case has been an object of clinical observation for about six months. A virgin exhibited the highest degree of prolapsus, with eventration of the bladder and uterus, together with a hernia of the intestines into Douglas' pouch. The usual modes of treatment having absolutely failed, we performed the following operation to fulfil these two indications: first, fixation of the uterus in approximately normal position; second, obliteration of the cul-de-sac of Douglas. The latter was opened from the posterior fornix by a broad semilunar incision, the intestines repositioned, and the posterior supravaginal portion of the uterus, at the height where the retractors project, was transfixed with a needle and stitched, by means of a loop of silk, from the rectum below the promontory on the right side to the posterior layer of Douglas' pouch. The lateral portions of the pouch, which then protruded in broad folds, were gathered by ample sutures on the left, but avoiding the rectum. Next the bottom of the cul-de-sac was opened by a broad incision, the upper wound in the fornix closed, and the hernial sac finally filled with thymol gauze. When the latter was removed, the sac contracted more and more every day, and finally formed a firm column almost the thickness of a child's hand. As it was impossible to restore the

atrophic pelvic floor to its integrity by other measures (massage, gymnastics, injections of strychnine), and the massive column protruded during walking and defecation, anterior colporrhaphy and prolongation of the perineum was performed with best results. The same treatment was employed for a second case of prolapsus which had been operated upon several times, and lastly for a case of movable retroflexion of the uterus which could not be retained by pessaries. All cases made an uninterrupted recovery.

This operation is suitable only for cases with widely distended Douglas' pouch. In retroflexion particularly, it will be advisable to perform the fixation of the uterus below the promontory from the abdomen.

HEGAR.—Intestines are found in prolapsus more frequently than has been hitherto assumed, if the patient be examined without antecedent preparation in the clinic. In a badly anesthetized patient with prolapsus who vomited much, H. is sure that in making posterior colporrhaphy the needle included a portion of the intestines or the omentum. Vomiting and meteorism followed and did not disappear until the suture was removed. The abnormal width of Douglas' pouch might be acquired by hard work, straining, etc. In persons with relaxed peritoneum who are free from prolapsus, we may at times observe a peculiar ante-position of the uterus and a very wide Douglas' pouch. H. considers Freund's method very valuable for the cure of extensive prolapsus.

W. A. FREUND interprets the condition described by Hegar (ante-position, etc.) as a stage of infantile development; he accepted the proposition made by Martin to combine the new method with colporrhaphy.

Second Day—Morning Session.

President, W. A. FREUND (Strassburg).

BAUMGAERTNER (Baden-Baden) showed a specimen of a

FIBRO-MYOMA.

The tumor was subperitoneal, weighed five kilogrammes, was attached to the fundus and posterior wall of the uterus, and extended into the broad ligament. During the operation (with extraperitoneal treatment of the pedicle) the cavity of the uterus was not opened. Recovery. B. closes the funnel-shaped wound in the skin by a secondary suture.

WENZ (Heidelberg) exhibited a

UTERUS SUBSEPTUS.

The patient was a IIpara aged 42. Pelvis very much contracted obliquely, the right side being the narrower. First vertex presentation, the posterior portion of the parietal bone engaged. After seven hours' duration of the pains, the membranes ruptured. A contraction ring formed and the funis prolapsed. Version and difficult extraction of a still-born child recently dead. During the operation a profuse hemorrhage occurred from a laceration of the posterior cervical wall. Porro operation; recovery. W. believes that this cervix was predisposed to rupture. The septum divides the uterus into a larger right and smaller left portion. The child lay in the right half. The cervical laceration beginning at the contraction ring can be seen exactly in the prolongation of the septum. The cervix is much thinner on the left than on the right side. Additional factors were, the age of the patient and a pronounced ante-flexion with dextro-torsion of the uterus.

KALTENBACH called to mind a case shown by him in Freiburg; the disposition to the rupture was dependent on an almost complete absence of the anterior cervical wall following a fistula operation. The rupture was transverse and occurred at the beginning of labor.

KALTENBACH (Halle) showed several specimens:

A UTERUS WITH MYOMA AND CARCINOMA.

which had been completely extirpated.

A POLYPOID TUBEROUS UTERINE SARCOMA

from a patient aged 30. The tumor was gangrenous, depending by a broad pedicle from the cervix, and was removed by the aid of ligatures: five days later total extirpation was performed. The fundus contains a myoma in sarcomatous degeneration. At present, one year after operation, the patient is still in good health.

The same disease was illustrated by another specimen. The uterus was in a state of chronic fixed retroflexion; the masses removed by the curette showed sarcoma of the mucosa. The extirpation was very difficult on account of the firm adhesions in Douglas' pouch. In the uterine cavity was a polypoid tuberos sarcoma. After five months of good health the patient relapsed and died.

A SMALL ACARDIAC MONSTER.

After its spontaneous expulsion, two leg bones, which had escaped through small openings in the skin, were passed without assistance. The cause probably was atrophy of the cutis.

A GRAVID UTERUS OF THE EIGHTH MONTH

from a woman who had died of hemorrhage from a varix. The cervix is long; the membranes are not closely attached.

GRAVID UTERUS.

Death from eclampsia before labor; but few contractions had been demonstrated. The cervix is extremely short. The membranes are closely adherent to the uterus above the internal os. There is no free space anywhere between the decidua reflexa and vera. An unfolding of the cervix during pregnancy must be assumed.

W. A. FREUND said that his experience with regard to relapses of sarcomas had been exceedingly unfavorable. Local excisions or total extirpations do not prevent relapses, no matter how early the cases come under operation.

(To be continued.)

ABSTRACT.

1. F. Spaeth: Case of Vaginal Hysterectomy for Myoma (*Centralblatt für Gynäkologie*, No. 35, 1889).—Mrs. B., 39, previously always in good health, menstruation regular, had borne a not quite mature girl in March, 1878, which died thirteen hours after birth. The case was interesting on account of a placental sinus thrombosis in a presumptive uterus bicornis

(cf. Prochownick, "Kasuistische Mittheilungen," *Archiv für Gynäkologie*, Bd. xvii., 1881, page 317 ff.). Moderate hemorrhage existed at the beginning and during the last weeks of this pregnancy.

The second pregnancy, in 1880, was normal, with the exception of occasional slight bleedings, until the beginning of the tenth month, when premature labor occurred. Three months later the woman came to be treated for a retroflexed uterus, which baffled all treatment on account of a myoma (diagnosed in 1883) at the fundus. The patient, nevertheless, felt so well that with the aid of a pessary, during the years 1881 to 1885, she only showed herself twice a year. Her profuse menstruation was controlled by the use of ergot.

In 1888 profuse hemorrhage set in, necessitating a uterine application of liquor ferri sesquichloridi. Ergot was taken badly. During the winter hydrastis and hot douches checked the frequency and quantity of bleeding. In February and March, 1889, the hemorrhage became excessive and the patient exceedingly anemic and weak. On the 5th of April the uterus was extirpated. The anterior cul-de-sac was opened and the peritoneum stitched to the vaginal mucosa by catgut ligatures. The parametria were ligated with strong silk and cut from the uterus, which was then turned forward into the vagina. The tubes and broad ligaments were tied with catgut and severed with the ovaries, the parametria were made safe by means of numerous ligatures, and the uterus removed. The anterior and posterior vaginal walls were united by means of catgut sutures, so that the serous membranes came in contact; the stumps of the parametria were fixed by means of sutures and placed in the lateral corners of the sutural line.

The only interruption in the convalescence was in the third week, from derangements of the right kidney, probably in consequence of numerous catheterizations.

The patient was discharged cured on the fifty-third day. The specimen showed a fibro-myoma of the size of an orange, under the submucosa of the right tube, embedded in the anterior uterine wall, bulging the same forward and imitating a uterus bicornis.

This is one of the rare cases in which a vaginal total extirpation of the uterus has been performed on account of a myoma. The other operative procedures would have been castration, or enucleation per vaginam or per laparatomiam (Martin). The objections to these were: The inevitable shock to a patient suffering with cardiac degeneration; the chances of a ventral hernia in a woman with a flabby abdomen and who had to work hard; the fact that castration (cf. Prochownick, *Archiv für Gynäkologie*, Bd. xxix.; Gleweke, *ibidem*, Bd. xxxiv., and others) or enucleation per laparatomiam does not guard against recurrence of hemorrhages and further growth of the tumor.

Enucleation of the tumor was contra-indicated on account of its high situation and involvement of the uterine substance; besides, suspicion was entertained that the benign myomendometritis had become malignant.

The indications for vaginal hysterectomy have already been stated by Brennecke (*Zeitschrift für Geburtshilfe und Gynäkologie*, Bd. xii., Heft 1), Bigelow (*AMERICAN JOURNAL OF OBSTETRICS*, 1886, page 137), and Richelet (*Centralblatt für Gynäkologie*, 1887, pages 135 and 157). Péan (*Gazette des Hôpitaux*, 1886, No. 119) opens the vesico-uterine fossa, extirpates the myoma, often by morcellement, and sutures the lacerated and severed uterine walls. He has in one case of multiple fibro-myoma taken out the entire uterus (1886). Orthman ("Statistik der Myomoperationen," *Deutsche medizinische Wochenschrift*, 1887, No. 112) reports four cases operated by Martin, twice on account of a submucous myoma, once subserous, and once for an interstitial myoma. Leopold (*Centralblatt für Gynäkologie*, 1888, No. 129, page 472) extirpated a uterus per vaginam on account of an intramural myoma in an excessively anemic patient.

A. F. E. KROG

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ORIGINAL COMMUNICATIONS.

ELECTRICITY IN EXTRA-UTERINE PREGNANCY.¹

BY

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Much has been said and written during the past year regarding the best method of treating extra-uterine pregnancy, and we regret to say that no small part of the expression of opinion has been of an acrimonious character. This is noticeably so in the writings of the advocates of early abdominal section, who deny electricity any place of therapeutic worth. They plead their cause with a warmth and assurance that at least carries the conviction accorded to positive statements, irrespective of their intrinsic value.

A short time ago electricity was regarded as a proper treatment, and perhaps used in many cases with but little judgment. The weak points of this method have been so strongly urged of late that there is danger of a great reaction. Fashion rules in medicine as in society, and her decrees in the world of thought and action, as in that of fancy and extravagance, are often illogical. A few years ago the abdominal cavity was opened with dread because of the bad statistics. Improved methods have brought better statistics, and the pendulum of public opinion returns, and where once was dread is now reckless daring. I have witnessed more than two hundred abdomi-

¹ Read before the New York Obstetrical Society, December 17th, 1889.

nal sections, and do not believe that laparatomy under any circumstances is a trifling operation ; yet it is so lightly urged as a diagnostic test as to carry the inference that it is without danger. In the hands of the best of surgeons, an abdominal section is an operation that is to be avoided, as are all dangerous operations.

Death is not the only penalty of a section that is to be taken into account ; intestinal obstruction, hernia, painful cicatrices and abscesses, all follow in the train of this procedure. And even after the belly is opened one may not be able to make a positive diagnosis. I have seen the removal of the appendages followed by such severe pain that a second section was necessary. The second section showed that the cause of the pain was the formation of intestinal adhesions in the line of the incision, the result of the first operation. These adhesions were liberated, but the patient's relief was only temporary, and she preferred to drag out a most miserable life rather than again submit to an explorative incision. The point I desire to emphasize is that laparatomy is not always a harmless procedure, and is occasionally followed, in the best of hands, by unfortunate results.

It is generally recognized among abdominal surgeons that one of the greatest dangers in operations in this department of surgery is the introduction of septic matter into the peritoneal cavity. To avoid this the greatest care and familiarity with special methods are required, and for this reason it can never be a harmless operation or be performed with impunity by the general surgical operator. It is a method of diagnosis not unattended with danger, and yet one that will often be required in cases of ectopic gestation. It would be as unjustifiable to allow a patient to bleed to death from a blood vessel in the peritoneal cavity as to become exsanguinated from a wound of the hand.

There is but one indication, besides dangerous hemorrhage, for section in extra-uterine pregnancy before the third month, and that is to procure drainage and to avoid septic infection. These indications seem to the writer to be the limitations of explorative incision in these cases, and do not in any way antagonize the field of electricity. The indication for electricity is simply to destroy the embryo before the third or fourth

month. It can be used without danger to the mother, and there is no case on record where its proper use has been followed by bad results.

Lawson Tait, in his lectures on the subject of ectopic pregnancy, objects to the destruction of the fetus, and does so in language both unjust and rude; characterizing those who entertain the idea that the sacrifice of the child in the interest of the mother is justified, as on a level with "abortion mongers and reckless craniotomists." His objections might be stated as based on the following grounds:

1. That it is immoral to kill the fetus.
2. That its destruction affords no safety to the mother.
3. That the means to bring it about are in themselves dangerous.
4. That the means are ineffectual.

If it is necessary to sacrifice the infant to preserve the life of the mother, it is a rule in obstetrics to sacrifice the child. No system of morality condemns such action. If the mother's existence is seriously jeopardized by the life of the child, and experience shows that the child's chances of survival amount to no more than the chance to become a curiosity in the annals of this class of cases, then, I say, by all means sacrifice the child—assuming that the facts have been presented to the family, and they leave the ultimate decision in our hands. Tait evidently does not believe it to be immoral to destroy the ovum before rupture of the tube, as he advocates its removal at that time. The moral question is raised after it has passed into the layers of the broad ligament; and we have here the same danger of rupture, but to a less degree than existed in the tubal pregnancy. It is doubted by him whether this diagnosis can be made often enough to justify much thought for the pre-rupture stage. The recent literature of this subject shows that he is mistaken. Tait has had three living children to show to sustain him in his stand for non-interference. The whole question must be settled from general clinical experience, but I am of the opinion that, unless far better statistics appear (excepting those of Mr. Tait), I should say, in the light of the present showing, destroy the child before the placenta presents such great risks to maternal existence. Mr. Tait is wrong in taking the position that rules should be for-

mulated by exceptional successes: the mass of operators must make rules from their results. Mr. Tait says that if the child survives the rupture it should be allowed to have its chance; but there are no symptoms by which we are sure that this rupture has taken place, except in cases not seen until after the fourth month. There are many cases where the histories would lead us to believe that there are no definite symptoms of rupture, and the patient recognizes that something is wrong by symptoms from the presence of the mass in the broad ligament. Mr. Tait implies that these cases are defective histories, but we believe there is a better explanation. The development between the folds of the broad ligament must be due to rupture, but the conception of this term usually involves the idea of sudden violence.

Six years ago I made a series of experiments on the recently removed uterus. The uterine termination of the Fallopian tube was dilated by means of a small probe, and through a small blow-pipe the tube was filled with liquid or air. If this was done quickly and with some force, or if the end of the tube was slightly compressed, the fluid or air would pass between the layers of the broad ligament. This demonstrated to me that the direction of least resistance was between the layers of the ligament, and, in those cases where the thinning of the tube is gradual, rupture might occur, with separation of the layers and with but slight hemorrhage. Of course the position of the placenta when it commences to be formed would be of importance, but before the third month there is no placenta, properly speaking. Gravity would tend to make the point of contact of the ovum most pronounced opposite the junction of the layers of the ligament. If the change occurred gradually and with little disturbance, it would be impossible to fix the date of rupture from the clinical history, and the child's chances of survival would be of the best; whereas a history of the rapid appearance of a mass to the side of the uterus would indicate hemorrhage of some extent and would proportionately jeopardize the child's chances for life. In this case the cavity containing the ovum would consist of broad ligament and tube. The relations of these cases are obscured when seen at the autopsy and operation table, and it will possibly be found, in such cases as that reported by Dr.

Taft, that the fruit sac is composed of tube and of broad ligament.

I have searched in vain for statistics that might help to determine the value of this observation, but have only found that the cases were not reported in a manner to warrant drawing deductions.

I have now reached the second of Mr. Tait's objections, *that the destruction of the fetus affords no protection to the mother*. I am very much surprised to see Mr. Tait make so unqualified a statement. I have collected twenty cases treated by faradism, fifteen cases treated by galvanism with interruption, two cases treated by galvanism without interruption, three cases treated by electro-puncture, and two cases treated by galvanism and faradism, and among these there is no case where the death could be remotely traced to the use of electricity as a fetical agent.

Tait thinks that if the case is near term and the child living we should operate at once. I am sure this is becoming the general opinion, and I know none of the gentlemen who advocate the use of electricity who would not agree with him. It is only at this time that these gentlemen could possibly be stigmatized by such coarse epithets as those Mr. Tait has seen fit to use. It is before rupture and immediately after it that the use of electricity may be considered. The dangers may be enumerated as follows :

1. The danger of delay :

- (a) From immediate rupture.

- (b) From rupture by continued growth of placenta.

2. The danger of septicemia.

I believe that no man is justified in treating a case of ectopic gestation who is not prepared at any time to operate by section, or at least to have near at hand some one who has the ability to operate. Should symptoms of internal hemorrhage appear, the general treatment of hemorrhage is in force. The risk of a few hours, necessary to apply electricity, would not be of much account ; and then, again, in many of these cases the diagnosis is not certain. Here, contrary to what Mr. Tait says, the passage of a proper and effective current will do no harm, even in inflammatory conditions. In regard to the continued growth of the placenta, the subject is in the con-

dition of "not proven." Cases have been cited where the placenta continued to grow (in the uterus) after death of the child—as that case reported by Skene before the New York Obstetrical Society: but we must remember that the placenta implanted in the uterus is under very different conditions from that in a Fallopian tube. To be sure, several cases have been adduced to show that the placenta, in cases where the fruit sac developed in the uterus, was disproportionately large to that of the fetus, but this alone does not prove that the fetus had died, as has been supposed. The small size of the fetus might be due to the fact that the placenta was implanted in tissues that were not suitable for it to carry on its function to advantage, and the embryo was insufficiently nourished. Dr. Harris says that an ectopic placenta varies in character, size, and form, according to its peculiar location and the vascularity of the parts over which it may be implanted. Turnbull is quoted as reporting a case where no true placental tissue was found, the cyst at one point being very vascular where the cord vessels are given off. "The placenta may be small and thin or very broad and thin. . . ." The evidence that Mr. Tait brings forward to emphasize the phenomenon of placental growth after fetal death is twofold: first, the so-called uterine "moles." As has already been said, the difference of locality mars this decidedly as an illustration, and, furthermore, in the "mole" other changes have gone on, principally of a fibroid character, which completely damage the comparison. Mr. Tait instances several cases of his own as clinical proof of the continued growth of the placenta, and then gives at length the case of Hart and Barbour. Hart and Barbour's case shows that a tumor "about" the size of a four-and-one-half months' uterine pregnancy contained a fetus "about" the size of a three months' pregnancy. The only thing this case proves (if my edition is like his own) is that Mr. Tait is not careful to quote his authorities correctly. In my book it says the tumor was about the size of a four-and-one-half months' pregnant uterus, and the fetus about the size of a four months' pregnancy. There are but two weeks between the approximate size of the fruit sac and the size the fetus should have attained. In fact, there is nothing in the case itself to show that the placenta grew after the death of the fetus. Mr.

Tait's quotation is that the uterine tumor was as large as a uterine pregnancy of four and one-half months, and the fetus was about the size of a three months' pregnancy. This makes a better showing for Mr. Tait.

That the means to bring about the death of the fetus are themselves dangerous. There is no case on record that justifies this statement. Such cases as were quoted by Mr. Tait where large current strength was used with interruptions, or where puncture was added to the current, are not to be considered, for the reason that their use is not advised to-day. But this Mr. Tait does not seem to understand; in fact, his condemnation of electricity is so general as to lead one to think he had never considered it of enough importance to acquire a working knowledge of its effects. Dr. Montgomery truly remarks "that in the derision of the value of this agent we cannot accept the dicta of men who are ignorant of the manner in which it is used, or of those who condemn it without a trial. An agent which is capable of arresting the life of mice and insects by passing a charge through a vessel of water in which they have been placed, as shown by the experiments of Landis, and which will destroy kittens several months old, should be effective in destroying fetal life when brought in close contact with the fetal envelope."

TWIN PREGNANCY, WITH HYDRAMNION; PREMATURE DELIVERY IN THE SIXTH MONTH.

BY

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(With one woodcut.)

WHILE the following case of hydramnion was not so rapid in its progress as some recorded cases, it was sufficiently so to be classed with the acute type of the disease, especially as vomiting and fever were present, and there was not that tolerance of the distending uterus which is a feature of the more chronic variety.

Mrs. J., white, æt. 31. Began to menstruate between 14 and

15 years old, and was regular until her marriage at 18. One year thereafter gave birth to her only living child. Has been pregnant three times since, twice aborting about third or fourth month, and the third time, about two and one-half years ago, being delivered of a fleshy mass which was called a "false conception." Neither the patient nor her husband has ever had syphilis.

She missed her period in June, 1889, and consulted me soon after, as she was anxious to learn whether she was pregnant, as she suspected that condition. On account of the peculiar vomiting, and the absence of menstruation which had formerly been regular, she was told that probably she was pregnant.

Between the second and third months she had slight hemorrhages, with some dilatation of the cervix, for which anodynes and rest were prescribed. The flow ceased and she was not seen until early in October, almost five months from the date of the supposed conception.

Now the signs of pregnancy were marked in the breasts, the enlarged uterus and softened cervix. The uterus at this time did not appear to be larger than normal for the stage of pregnancy, but the patient already complained of frequent pain, which was referred to the uterine body. There was still morning vomiting, but the appetite was good and the patient's appearance healthy. From the latter part of October (about the end of the fifth month) the uterus developed rapidly in size, dulness and fluctuation being confined to that organ. Pain, referred to various parts of the region occupied by the womb, was almost constant and required the use of morphia. The fetal parts and movements could not be distinctly felt, and the heart sounds could be heard only occasionally, and then very indistinctly. Ballottement, however, through the vagina gave the very important sign of a body moving very freely in the uterine cavity. There was no edema of the abdominal walls nor signs of effusion elsewhere. The bowels were confined; the urine rather scanty and high-colored, but contained no albumin. At about the middle of the sixth month (November 10th) the uterus was larger than that of a woman at full term, and another physician, who was called in at this time, diagnosed pregnancy at full term, telling the patient that she had missed her count and would be confined in a short time. From the 10th of November to the 23d, when labor ended her sufferings, the distention became extreme. The abdominal walls were stretched to their utmost, so that fluctuation could no longer be elicited, the dulness extending high up in the epigastrium. The patient's appearance was that of advanced ovarian dropsy, and it was impossible for her to lie down. The pulse became rapid and feeble, and vomiting was easily

provoked. There was moderate fever during the last week, temperature 100° to 102° . By November 23d her suffering was extreme, and it was decided to interfere to save the patient from a condition which had become critical. Dr. I. G. Heilman was called in consultation. He agreed in the diagnosis of hydramnion, but as there were on that day some uterine contractions, and the cervix was dilated to a slight degree, it was decided to wait a few hours before taking active steps to empty the uterus. Through the cervical canal the membranes were reached by the finger, and a portion of a fetus could be felt, which by ballottement could be made to float away to a considerable distance, and, moreover, gave independent movements, proving that the fetus was still living. At midnight of the same day I was called, and found that pains were frequent and regular, and that the os was dilated to a diameter of about two inches.

The membranes were very tense, but did not project into the vagina to more than an ordinary extent. They were pierced with the sharp end of a small probe, with the intention of allowing the amniotic fluid to escape gradually; but the intra-uterine pressure immediately enlarged the opening, and the waters gushed forth, deluging the bed, and, soaking through the latter, ran in a stream across the floor. Efforts were made to retain the fluid in the vagina by closing the vulva with the hand, but they were not successful. It is difficult to estimate the amount of fluid in this case. Sufficient, however, was collected to fill an ordinary chamber-pot, and there was certainly much more than that amount which escaped. The uterus contracted promptly as the fluid escaped, and a fetus presented by the breech and was delivered in a few minutes. On examination, a second was found presenting, also by the breech. The second fetus was quickly extruded in the amniotic sac, which was noticed to contain *almost no fluid* at all. Both infants were born alive—that is, with the hearts beating—but they made no efforts to breathe. A dose of ergot had been given as the first was delivered, and the placenta was expressed without difficulty. The puerperium was normal, and the patient soon regained her health and strength.

The twin fetuses and the secundines were carefully examined for light upon the etiology of this rather rare complication of pregnancy. The placenta was large, single, oblong in shape, with the cords marginally inserted at the smaller ends. It appeared normal in structure, except that it was pale and somewhat edematous opposite the dropsical sac. The chorion was single and showed no peculiarities. The amnion formed two complete sacs, with no intercommunication, the larger occupying fully three-fourths of the placental surface. The membrane was clear, of average thickness, and exhibited no

trace of inflammation or other disease. Both cords were of ordinary length, that of the dropsical sac (and larger fetus) being rather thick with gelatinous material, while the other was thinner. Both had the ordinary arrangement of vessels. The infants were females, the first-born (from the large sac) being somewhat larger and better nourished than the other. Length of larger fetus, $11\frac{1}{2}$ inches; length of smaller fetus, $10\frac{3}{4}$ inches; weight of larger fetus, $18\frac{1}{2}$ ounces; weight of smaller fetus, 13 ounces. The fetal circulation appeared normal in both infants. No stenosis or obstruction could be found. There seemed to be no communication between the respective umbilical veins. The vessels, particularly the umbilical arteries, were developed to a much greater extent in the larger than in the smaller fetus, this applying to the placental vessels as well.

The internal organs were examined and compared as follows: Larger fetus—heart weighed 95 grains; left ventricle,



A careful tracing of the outlines of the two hearts, showing hypertrophy of the larger one.

average thickness 2 lines, right ventricle $1\frac{1}{2}$ lines; kidneys (together) weighed 63 grains; liver weighed 372 grains. Smaller fetus—heart weighed $40\frac{1}{2}$ grains; left ventricle, average thickness $1\frac{1}{4}$ lines, right ventricle $\frac{7}{8}$ line; kidneys (together) weighed 31 grains; liver weighed 365 grains.

It will be noticed that while the comparative weight of the livers corresponds nearly to that of the bodies as a whole, there is a manifest disparity in the heart and kidneys. There was well-marked hypertrophy of the heart of the larger fetus, and a corresponding enlargement of the kidneys. Careful search failed to discover any abnormality in the orifices or valves of the hypertrophied heart. The other internal organs appeared normal. Both urinary bladders contained a few drops of fluid. The peritoneal and pleural cavities of the larger fetus contained considerable fluid, which was not the case with the other.

The theories brought forward to explain the causes of hy-dramnion have been various and contradictory; but, without discussing them, the facts of this case seem to strengthen the position of those who claim for the disease a fetal origin. For—

1. One amniotic cavity only was involved.

2. The fetus occupying that cavity exhibited the evidence of cardiac activity altogether out of proportion to the development of other parts. Increased arterial tension would probably cause transudation of the serum of the blood, as we know, from the experiments of Sallinger, that pressure upon the vessels will cause an active transudation into the amniotic cavity.

Frankenhauser's theory,¹ that the cardiac activity in one fetal circulation, through a vascular communication, causes cardiac stasis in the weaker side and increased transudation on *that side*, is contradicted by the facts of this case, as the increased fluid was all on the side of the stronger fetus. It is hard to believe, however, that a hypertrophied heart alone could give rise to such a rapid and excessive formation of fluid.

This case is of importance to the obstetrician chiefly from a diagnostic point of view. The fact of twin pregnancy was entirely overlooked. Owing to sensitiveness to pressure, and the increased amount of fluid, the fetal parts were not detected by palpation, and, as has been stated, the fetal pulsations could be only faintly heard at times, and could not be traced to separate origins.

The rapid growth of the uterus, the peculiar pains, and especially the fluctuation and the almost pathognomonic signs by ballottement, were sufficient for a correct diagnosis of hy-dramnion. The value, too, of the opportunity of studying the development of the disease was well illustrated by the fact that another physician, unacquainted with the progress of the case, and examining the patient before the distention became extreme, failed to recognize the disease and decided that she was about to be delivered at term.

¹ Cyclopedia of Obst. and Gyn., Wm. Wood & Co., vol. ii., page 241.

A CASE OF EXTRA-UTERINE PREGNANCY; OPERATION AT
THE TWELFTH MONTH, THREE MONTHS AFTER
DEATH OF CHILD AT TERM; RECOVERY.¹

BY

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(With one colored plate and three woodcuts.)

IN November, 1889, I was called to see a patient with Drs. C. R. Ellison and the late D. C. Cocks. She had engaged a midwife to attend her in confinement September 10th, 1889, but failed to have anything more at that time than a slight bloody discharge, accompanied by sharp, cutting abdominal pains and subsequent cessation of all signs of life in her child.

The patient, Mrs. H., was a very pale, emaciated woman, small of stature, and weighing less than one hundred pounds. She was American, age 24 years, married, and had two normal labors with healthy children, the last child twenty-one months old. She describes her previous confinements as perfectly natural and comparatively easy. No miscarriages.

Early in December, 1888, her menses ceased, and she considered herself normally pregnant. She says she suffered no inconvenience until she was between three and four months pregnant, when, after severe exposure to cold, she was taken with very violent pain in the abdomen on the right side, and was laid up for two or three weeks with "inflammation of the bowels." She describes the pains as like severe labor pains, and they were very bad at the times corresponding to a menstrual period. She says there was no discharge from the vagina. Patient has never been well since, having suffered with pains of varying severity at irregular and frequent intervals.

In early June, 1889, she was obliged to enter the New York Hospital on account of the almost constant agony and steady emaciation. In the hospital it was found that the abdomen was the "seat of a tumor filling the entire lower portion and reaching nearly to the umbilicus; smooth and movable and semi-solid, and larger in superior than in inferior portion. The tumor extends a little more to the right side than to the

¹ Read before the New York Obstetrical Society, December 17th, 1889.

left, and there is some tenderness on palpation, more marked on right side. Uterine souffle well marked. No fetal movements. Vaginal examination shows os patulous and cervix soft and pressed forward towards symphysis pubis. In posterior cul-de-sac can be felt a hard mass resembling a child's head. Treatment, rest in bed."

During the next few days the patient suffered very severe abdominal pains, which were relieved by hot stupes. The pains subsided, and were renewed the latter part of the month, and again relieved by stupes. About the last day of June the patient desired to go home, and was discharged contrary to advice.

Her subsequent history was that she had occasional attacks of abdominal soreness and pains, accompanied by obscure sensations which she attributed to movements of the child. Early in September, 1889, she expected to be confined, with the results above stated. She says that from that time there has been a very slight bloody vaginal discharge, which very markedly increased during the first part of October and November.

At the time of my first examination I found an abdominal tumor, very round, tender, and fluctuating—very *indistinctly* fluctuating over the central and right portions, from two or three inches above the umbilicus down to the lowest portions of the tumor. The top and extreme left portions of the tumor were clearly fluctuating.

No solid body could be felt at any point, and intestinal resonance was marked at the epigastrium and in the flanks. In the left inguinal region, extending distinctly above Poupart's ligament, and very movable, was a second pear-shaped tumor, about two inches in diameter, which was soft and rolled or slipped about under the fingers and upon the left inferior segment of the greater tumor. While pinching it up under the thin abdominal parietes it became hard, remaining so several minutes, and then growing soft as before.

Vaginal examination under chloroform showed the cervix soft, the os widely dilated, and the whole uterus, three inches deep, crowded upward, forward, and to the left (see Fig. 1). The dilatation of the uterus had been accomplished before my arrival by seatangle tents, and I easily introduced my index finger to the fundus of the uterus, which corresponded with the small tumor mentioned. With the external hand holding the fundus, and the left index finger within the cavity, the uterus could be distinguished with absolute certainty. The vaginal portion was well rounded and normal. The uterus was quite movable, and appeared to be only loosely affixed to the greater tumor in the abdomen.

The vagina and uterus were crowded forward by a hard, round tumor occupying the whole pelvic canal, and having

all of the characteristics of a fetal head. By the rectum this tumor could also be felt with great clearness. There was no movement and no placental bruit or souffle to be heard.

Diagnosis.—Extra-uterine gestation in the twelfth month, either abdominal or tubal, with placenta in front.

The patient was advised to go to hospital, and was accordingly admitted to St. Andrew's Infirmary for Women, in this city, in the latter part of November. Operation December 5th, 1889, assisted by Drs. Cocks, Tracy, and W. F. Martin, and in the presence of Drs. Goffe, Read, Carman, Ellison, and Schoonmaker.

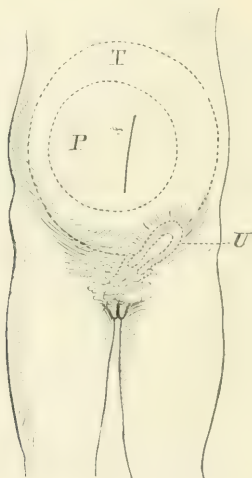


FIG. 1.—U, position of uterus; P, position of placenta; T, position of tumor. Line of incision indicated by straight line.

It is very especially worthy of note that during the few days that had elapsed since the patient entered the infirmary the tumor had sensibly diminished in diameter, *absorption of the amnion* having evidently progressed rapidly.

The patient being properly prepared and anesthetized with ether, an incision four inches long was made in the median line, two and one-half inches above the pubes, and afterwards enlarged to five inches in length, thus extending above the umbilicus and to the left. The peritoneum was quickly opened, and two or three ounces of bloody serum escaped. A

bluish, glistening tumor presented in the incision, and was traversed by several enormous veins within one-quarter inch of the line of the incision. Adhesions were thick and numerous, especially on the whole of the right side of the incision, where they were exceedingly tough and vascular. The only point at which several fingers could be carried around the tumor was on the left side towards the uterus. Exploration of this part was made before, and more thoroughly after, opening the sac, and the uterus was found, as before described, attached to the tumor by an isthmus (as shown in Fig. 2). The left tube and ovary could also be felt, but none on the right.

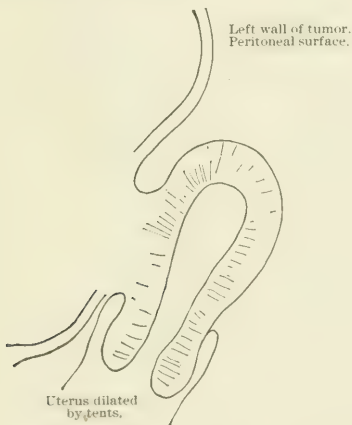


FIG. 2.—Showing uterus, actual size.

Within the incision, palpation of the tumor showed deep, indistinct fluctuation, with no trace anywhere of any fetal part. The previous diagnosis of anterior implantation of the placenta in a tubal pregnancy was adhered to, and a small trocar was thrust in three inches before fluid was drawn. Then a stream of dark-green fluid spurted from the trocar and nearly a pint was drawn. A free incision into the mass was then rapidly made, and it was found that the line ran almost directly through the middle of the placenta. Almost no hemorrhage resulted, as the placenta was shrinking and looked almost like parboiled meat. The child, which weighed 7½ pounds, was rapidly extracted by the feet, and the umbilical cord broke by its own weight, so far was it disintegrated. The

sac being drawn out of the abdominal wound as far as possible, the placenta was picked off piece by piece by the fingers. The posterior portions of the sac were very thin, while the anterior portions were fully one-third inch thick and very vascular. The sac was fixed by adhesions everywhere, and on its right side could be seen large veins, as well as what appeared to be a portion of the Fallopian tube buried in the adhesions.

The left side has already been described.

The peritoneal cavity and the cavity of the sac were thoroughly flushed with hot water (120° F.), and a large drainage tube, $\frac{7}{8} \times \frac{3}{8}$ inches in diameter, was carried well down to the bottom of the sac. The sac walls were then carefully stitched up and down to the tube, and the peritoneum of the sac stitched up to the peritoneum of the parietes. The parietal wound was closed with Chinese-silk sutures, one-third inch apart, and all dressed with iodoform. Time of operation, one hour and forty minutes. The patient rallied well; in fact, had no signs of depression or shock. Vomited only once, within two hours of anesthesia, and made an excellent recovery without incident further than elevation of temperature, on the second day, to 102.2°, pulse 130. This subsided readily under catharsis by magnesium sulphate, and all went smoothly afterwards. The character of the fluid drawn from the drainage tube was reddish brown, gradually becoming mixed with some pus.

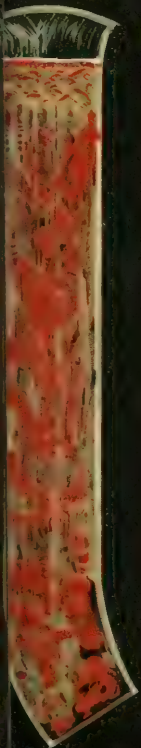
The large tube was withdrawn and a smaller one substituted on the eighth day, the sac being cleansed twice daily with emulsion of creolin, 1 to 200.

The condition of the parts surrounding the tube was daily inspected by means of artificial illumination through a small mirror carried down to the bottom of the tube and rotated so as to *see* every portion. In this way it was ascertained that there were no pockets of pus or blood shut in by the walls of the tube, and considerable anxiety was thus allayed. (I have since followed the same plan in an unusually difficult ovariotomy, and with the same satisfaction.)

Having inspected the tissues on different days, I made colored drawings of the reflex at the several periods, representing the various "fields" as though in one continuous view (see plate).

The small tube was removed in the second week, and the tract dressed as before. The patient sat up at the end of the third week, having a fistulous opening one-quarter inch in diameter and three inches deep, with a few drops of mucopus discharging daily. Appetite excellent, and gaining flesh and good color. No pains or other distress. The uterus has slipped over into its normal position. The patient goes about waiting on other patients.

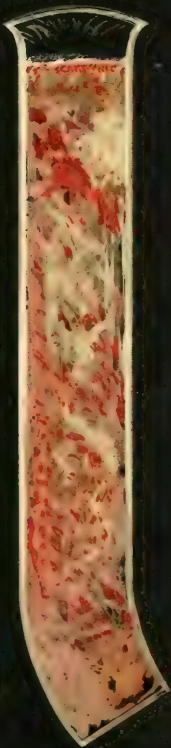
2nd Day.



3rd Day.



6th Day.



8th Day.



SHOWING REFLEX OF DRAINAGE TUBES.

Fig. 3 shows very fairly the relations of the parts.

January 19th, 1890, the patient menstruated normally, and on removing the little plug of gauze from the abdominal fistula about a half-drachm of blood followed. No further appearance in this direction.

I wish to call particular attention to one phenomenon in this case which is perhaps of great value to the operator. I refer to the fact that absorption of the amnion had been clearly marked.¹ This has been suggested as of possible value



FIG. 3.—Extra-uterine pregnancy, twelfth month. Placenta implanted anteriorly.

in determining the condition of the placenta. And in such a case as the one under consideration, where it was positively necessary to plunge through an immense placenta, it is of the utmost value to be sure that it is practically a *dead* organ. *Absorption of the amnion may be considered as pretty good evidence of the change desired*, and is to be waited for, if the case will allow of delay.

Finally I will state that the head of the child was macerat-

¹ "Abdominal Surgery," by Greig Smith, October, 1889, page 328.

ing, and the condition of the sac and the woman's health made it unquestionably our duty to operate, and not to submit her to the terrible ravages of a suppurative process.

SOME MOOT POINTS IN OBSTETRICS.

BY

D. T. SMITH, M.D.,

Louisville, Ky.

(With three woodcuts.)

For more than twenty centuries large numbers of the foremost minds in the ranks of medicine in each succeeding age have directed their ingenuity and learning to the explanation of the phenomena of labor. To assert, then, that a very large proportion of the explanations hitherto offered of the movements involved in the mechanism of labor are wholly erroneous, would appear to deserve the charge of presumption and arrogance.

However positive I may feel, therefore, in my convictions, I will begin by deferentially asserting that facts, principles, and analogies can be adduced strongly leading to the conclusion that much of the accepted teaching relating to the factors and mechanism of labor is erroneous.

These errors refer—

1. To the uses of the amnion.
2. To the cause of head presentation.
3. To the cause of rotation.
4. To the mechanism of extension.

1. *The Uses of the Amnion.*—The uses commonly ascribed to the amnion in our physiologies are such as might be inferred from observations of its office in the higher animals, and especially the human race. The amniotic fluid is said to preserve the fetus, and also the fetal membranes, from mechanical injuries; to permit the limbs to move freely and protect them from growing together; and also to aid in dilating the

os uteri during labor. This no one can gainsay, as far as the higher animals are concerned ; but if we inquire the office of the amnion in the reptile, the batrachian, or the bird, will this answer suffice or apply ? Certainly not. So far as we know, the different parts of the body of the eel, which has no amnion, do not grow together with any more frequency than those of the snake or the crocodile, which have an amnion. Nor is it likely even, with the bird, that the fluid of the amnion one time in a million protects the young from injury. Nor could it aid, in any of these animals, in opening the mouth of the uterus. What, then, can be its office in the lowest animals in which it occurs, and the office common to them and the higher animals ? But one appears. It is that of a waste-bag for the injurious excretions from the body of the fetus.

In the very lowest vertebrates the umbilical vesicle, or yolk-sac, was sufficient to preserve, in a proper condition, the nutrient material of the ovum. But a little higher up the yolk-sac had to be supplemented by a receptacle for material likely to contaminate this store of food ; and this receptacle Nature converted, among the higher animals, into a protection for the embryo and an aid in parturition. From this view of the case, one might conclude that the amnion, as a waste-bag, is of more importance to animals low down in the scale than to the higher animals, in whom the waste is carried off in part by the placenta.

2. *Cause of Head Presentation.*—It is unnecessary to repeat the various theories that have been put forth from time to time as to the cause of head presentation ; it is enough to say that no one of them is accorded general acceptance among obstetricians. I will simply state my own view and the manner in which it seems borne out by facts and analogies.

Whoever has practised diving in deep water has discovered that if he holds his arms in such a way as not to hinder his progress—folded at his back or breast, for instance, or pressed to his side—and then kicks out with his feet, he will go directly and head foremost to the bottom. Now, the position of the child in the uterus, and the course of its development, are such that it makes essentially similar movements. The flaccid state of the walls of the uterus allows them to yield when pressed against by the lower limbs, and in this way the fetus gains

the advantage that would accrue to it from swimming in a larger mass of water than that actually contained in the uterus.

If now we add to the influence of these movements that of the increasing conicity of the lower segment of the uterus that develops during the latter months of pregnancy, we can easily account for the greater preponderance of head presentations. In every position the mother takes, except that of lying on the side, the outlet of the uterus is lower than the fundus, and in all except the latter the movements the child spontaneously makes will tend to place it head downward.

As the lower segment becomes more and more conical, the head is the more likely to remain in it when once placed there, since the arms of the fetus are passive, and the activity of the legs continues, and even increases, as gestation advances.

On the other hand, should the breech get into the lower segment, the extension of the legs will broaden the corresponding extremity of the fetal ovoid, giving it a tendency to escape and make place for the head.

In the early months head presentations will more often fail, for the reason that the fetus will move more sluggishly and more rarely place itself head downward, and for the further reason that, the uterus being spherical, the fetus will fall over more readily, even after it has gained the inverted position.

The large size of the head of the hydrocephalous infant will prevent engagement in the conical segment, and, furthermore, the movements of such infants will be less energetic and less persistent.

Dead fetuses will be likely to remain in the position in which death found them, and so present at birth. In a very few instances decomposition might generate gases in the lungs alone, and thus determine breech presentation by causing the head to rise. An extensive generation of gases, on the other hand, would probably leave the head least affected, and this would naturally settle to the lowest point.

It is greatly in favor of this theory that it supplies a reason for the equally predominating frequency of head presentations in quadruped mammalia, which no other theory has ever done. A calf, a pig, or a colt, or the young of any other quadruped mammal, if thrown into water the moment after birth, in such a way as to be plunged beneath the surface, will, by the exer-

cise of natural walking movements, swim to the surface. Now, the outlet of the uterus of the quadruped mammal is higher than the fundus in nearly every position the animal ordinarily assumes. By the exercise, therefore, of its natural walking movements, the young of the quadruped mammal carries itself head foremost upward to the outlet, resulting in presentation, with great uniformity, by the head.

3. *Internal Rotation*.—It could not be wide of the mark to say that the most important thing for the obstetrician, in the exercise of his office, to understand is the state and course of internal rotation. Rather let it be said that he who does not understand rotation in its practical bearings is not an obstetrician. This cannot be said, however, of rotation in its theoretical aspects, for here there is anything but a consensus of opinion.

It is needless to enter into details of the various theories, and of the arguments adduced to sustain them on the one hand or to refute them on the other. They are found in all the text books of obstetrics, and every student is familiar with them. I will add but one objection, and that to a theory proposed, I believe, by Berry Hart. This theory is that the part of the presenting extremity of the fetal ovoid that first reaches the floor of the pelvis is directed forward. I think this theory erroneous in principle and refractory to experimental proof. To illustrate what might be supposed to take place under the circumstances named, let a boot tree be taken and suspended on a rod passed through a hole bored through the longitudinal axis of the leg, in such a way that it can revolve without hindrance. Now let the boot tree be moved forward by a force applied to this rod, and at the same time let the toe be permitted to press on the floor. Will the toe turn forward in such a case, or will it not? Most assuredly it will have a tendency to turn to the rear. And just as little, in my opinion, will the part of the fetal ovoid that first touches the floor of the pelvis turn forward, merely by reason of being the first part that does so touch.

The principle I would propose as explaining rotation is the almost axiomatic one that a force moves along the line of least resistance; or, rather, that a force will be deflected from points of greater resistance.

My assumption is that the anterior surface of the passages is the line of greater resistance, and that the roughest and most resisting surface of the presenting part of the fetal ovoid will be forced from the anterior to the less resisting posterior surface of the passage.

To make clearer the physical principles involved in rotation, let us take a tube of wax constructed of parts of two other tubes, one larger than the other. Into this tube let a cylinder be inserted with a bullet attached to one side of the advancing end, in such a way as to compel the cutting of a groove in the wax as the cylinder advances, and let the beginning of the groove be at a point in the part of the tube formed by the segment of the larger circle. It is clear that the wall of the groove thus made which is on the side next to the larger extremity will be higher and stronger than that on the side toward the smaller extremity; just as a furrow made by a plow driven along a hillside will be deeper on the upper than the lower side. The bullet will, therefore, necessarily move toward the segment of the tube corresponding to the smaller circle, carrying the cylinder with it, until a point has been reached by the bullet where the two walls of the groove it makes in the wax shall be equal in depth, when rotation will cease.

Let us now apply this test to the several presentations and positions. In vertex presentations with the occiput anterior, and in rotation of the shoulders and hips, the movement is explained equally well by ascribing it to the influence of the smooth ischial planes. And although it is obvious that the two opposite surfaces of the ovoid in the two last-named instances are not different in smoothness, nevertheless here, as in occipito-anterior positions, the movement is in the direction of least resistance.

But in occipito-posterior positions, in face presentations, and in rotation of the head in breech presentations, we have a clear field for the application of the principle. Let us take up, first, rotation in occipito-posterior positions. Here we have, on one side of the presenting extremity of the fetal ovoid, the roughnesses of the angles of the forehead, the nose, chin, and malar bones; and, besides, the face, being free of hair, may be stripped of the vernix and thus become more resisting. On the opposite side is the smooth occiput, regular in outline and

usually covered with hair, enabling it to retain the unctuous vernix, making it altogether favorable for gliding. The face is the rougher surface, and the occiput the smoother and less resisting.

According to the principle of physics assumed at the outset, the surface first described, the face of the fetus, will be driven with the greater force from the point of greater resistance, and will turn to and follow the line of least resistance. The part with the smoother surface, the occiput, on the other hand, while it will seek also the line of least resistance, will be compelled by the more resisting anterior part to turn to and pass out by the line of greater resistance.

Now, which of the surfaces of the passages affords these lines of greatest and least resistance respectively? If we examine the pelvis, we find that the passage presents a short curve under the pubes and a long curve along the sacrum. Moreover, while the hollow of the sacrum is approached by a guide of bony substance, the pubes is approached over a muscular floor which may be pushed forward by the head of the child, leaving in the abrupt edge of the pubes a strong obstacle to progress. On transverse section, also, the anterior walls of the canal form part of a larger circle than the posterior walls.

If these assumptions were known to be true, it could be predicted with the greatest confidence that the face would turn backward and the occiput forward, even if no observations had ever been made. Nor is it difficult to explain how, in certain cases, failure may occur in rotation.

Thus, if the head should reach the floor in a state of extension, the obstacles to rotation might be greater than to birth in that position; for then a wedge would have to be rotated instead of the truncated cone which is offered in case of complete flexion. Or the rigidity of the soft parts, or the large size of the head relative to that of the passages, might be so great as to make the obstacles to advance less than those to rotation, when the child would be born in the occipito-posterior position.

Let us next take rotation of the head in case of footling presentations. Here exactly the same forces operate, only they operate in some respects with greater intensity, since the friction produced by the face passing chin foremost will be some-

what greater than that produced as it passes forehead foremost. On the other hand, the passages, having been already dilated by the body of the fetus, may offer slightly less resistance to the advance of the head. But, taken altogether, the forces operating will turn the face to the sacrum with somewhat greater certainty than in vertex presentations.

If, however, extension of the head should take place during descent, throwing the face upward and the occiput backward, the chin being nearly in a line with the sternum, the point of



Face presentation.

greatest friction will be shifted to the spinal surface of the fetus, and rotation will take place so as to turn the chin to the pubes.

4. *Face Presentations*.—In face presentations, the occiput being borne well back on the spinal column, the posterior surface of the presenting extremity of the fetal ovoid will be the most resisting. The consequence is that rotation of the forehead takes place posteriorly, and the chin is turned to the pubes. If, however, extension is incomplete, so as to equalize

the resistance of the two sides, the chin may rotate posteriorly.

5. *Footling Presentations*.—In footling presentations, where one foot is brought down, the corresponding side invariably rotates to the front; or, rather, the opposite side turns to the sacrum. Here the most abrupt and resisting part is evidently the hip of the leg remaining in the uterus, and this turns posteriorly to the sacrum.

In conclusion let us concede that not one of these deductions is true, that they are all a mere bundle of fancies; they still offer a most valuable basis for remembering and predicting the rotation proper in each particular case. The principle



Trunk presentation.

may be formulated as follows: *Whichever part of the presenting extremity of the fetal ovoid offers the most resisting surface, will turn by the shortest route to the hollow of the sacrum.* This would have to be slightly modified to apply to the after-coming head, since this would not be the presenting extremity.

In those cases of trunk presentation, also, in which it is possible for labor to proceed, the head invariably turns forward and rests above the pubes, the anterior shoulder becoming at the same time fixed under the symphysis. Such cases present a verbal exception to the aphorism just laid down, in that the rotation of the roughest part takes place forward and not

backward. However, it is easily enough explained on the same principle of unequal friction, if we reflect that here rotation takes place above the pubes, and that the part of the canal along the lax abdominal wall, and not that along the sacrum, affords the line of least resistance. The head, therefore, which is here the most resisting part of the advancing fetus, turns to the wall of the abdomen above the pubes. Contrary to the teachings, it is the head then that, by its rotations, brings the shoulder under the pubes, instead of the shoulder bringing the head to the front above it.

Whence comes, then, the prevalent notion that the floor of the pelvis is an active power in effecting rotation? Does the pelvic floor, indeed, contribute nothing to this result? On the contrary, it contributes much, but not in the way that has been suggested. If the parturient canal were straight and continuous, the helix of the thread of the screw cut by the passing of the rough points on the presenting parts of the fetus would be very low; the fetus must needs traverse a great length of canal to cut a thread amounting to as much even as the quadrant of a circle. But with the aid of the resistance of the pelvic floor, which yields slowly and gradually before the advancing head, the helix may rise to the highest possible limit, and rotation may take place to the required degree during a very limited amount of direct advance.

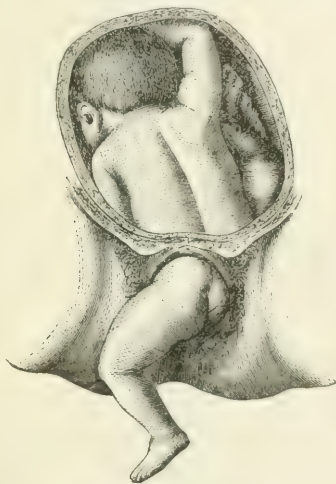
On the other hand, if the pelvic floor were rigid, as a board, so that advance could not take place, rotation must fail.

The observation so often made and so strenuously insisted upon by Berry Hart, that the first part of the presenting ovoid that reaches the pelvis is turned forward, is delusive only in respect of the deductions sought to be made from it. The fact is well established. But the meaning of it is that the part of the ovoid that first impinges on the floor of the pelvis becomes the pivot on which rotation takes place. When the vertex forms this pivot, the face becomes the long arm of a lever of which the occiput is the short arm. As this pivot, then, is driven toward the pubes, the thickness of the anterior walls of the grooves cut by the inequalities of the face already described becomes more and more marked and more and more promotes rotation.

This may be easily demonstrated by putting a floor of card-

board in the skeleton of the pelvis, or taking any other circle, and while using one arm of a pair of compasses as the pivot, let the other be turned as the pivot is made to advance toward the pubes, or to a point on the circumference of the circle corresponding to the symphysis.

6. *Factors of Extension.*—I incline to think that current explanations of the causes that determine the beginning of extension can be somewhat improved upon. Here also it is unnecessary to dwell upon the various teachings upon this



Leg brought down in trunk presentation.

subject, for they are sufficiently familiar to all readers. Let us first take up, as before, occipito-posterior positions. In these cases the head advances till the nape of the neck rests against the pubes. The advance of the child may or may not be for a time arrested; but in either case the elastic perineum and resilient posterior parts of the pelvic floor, which have been put upon the stretch, will press upon the head in a plane lower than that upon which the pubes impinge. The head, therefore, swinging on the occipito-atloid articulation as a

hinge, will be forced forward. As the neck is prevented by the pubes from projecting forward, this movement necessarily results in extension. The notion that the same forces that bring the child down till the nape of the neck is arrested by the pubes, then operate in a direct manner to cause the chin to leave the sternum, appears unintelligible on any principle of physics.

If the occiput happens to remain posterior, hyperflexion will result from the causes named. If the breech presents, a bending forward of the hips takes place, the pubes here also acting as a fulcrum, while the vertebral articulations supply the hinge; the force, as in the other cases, being applied by the elastic structures of the pelvic floor at a lower plane than that of the pubes.

ENORMOUS OVARIAN CYSTS: A THEORY OF HEART FAILURE;
A PLEA FOR A DOUBLE OPERATION:
BRIEF HISTORIES OF FOUR CASES.¹

BY
GEORGE E. ABBOTT, M.D.,
New York.

(With one woodcut.)

CASE I. (see cut).—Admitted to the Woman's Hospital May 29th, 1880; age 26; married nine years; three children; no miscarriages; labors normal—last, three and one-half years since; decidedly emaciated; facies ovarianæ marked. About three years since patient noticed swelling of right abdomen, which increased very rapidly, and in September, 1877, by advice of her physician, the tumor was tapped, when 52 pounds of clear yellow fluid were removed. She has been tapped 5 times in all, at intervals of 4 and 6 months, amounts of from 10 to 50 pounds being removed each time. The last tapping was in April, five weeks since, when a half-pailful of dark bloody fluid was removed. She now measures 58½ inches in circumference at level of umbilicus; from r. a. s. s. to umbilicus is 20 inches; from l. a. s. s. to umbilicus is 11 inches;

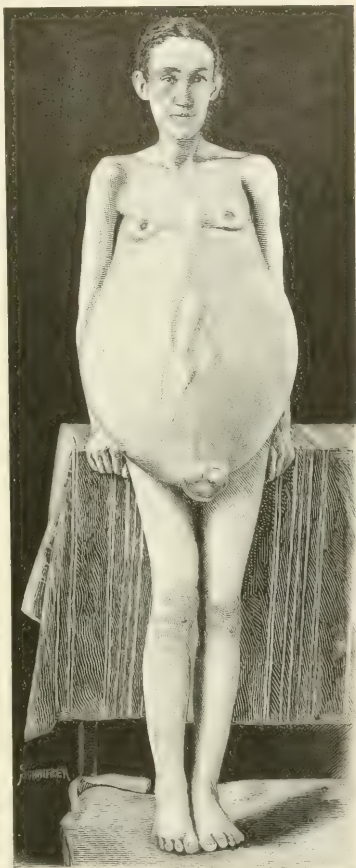
¹ Read before the New York Obstetrical Society, December 3d, 1889.

from pubes to umbilicus is 15 inches; from ens. cart. to umbilicus is 25 inches; her weight is 202 pounds.

June 3d. — Operation. Ether, antiseptic spray; incision in median line, four inches in length. Tumor evacuated by large trocar and canula; contents evacuated rapidly; slight oozing from several adhesions broken up by hand. Pedicle transfixed, ligated with silk, and dropped. Other ovary cystic, removed. Drainage tube. Time, thirty-six minutes. Weight of fluid 80 pounds, of sac 11 pounds; total, 91 pounds. Patient's pulse was very weak during the operation, necessitating the administration of an ounce and a half of brandy, and afterwards still continued hardly perceptible. Brandy and ether were given hypodermatically, with Magendi for restlessness and stimulants by rectum; but in spite of all efforts the patient did not rally from the shock, and died.

At this time (1880), in discussing the case with my fellow house surgeon, Dr. De Saussure, of Charleston, S. C., I maintained

that had the tumor been *first aspirated*, and afterward the sac removed by a second operation, the patient might have lived.



CASE II. (with photograph). (Kindness of Dr. W. E. Bullard.)—Admitted to Post-Graduate Hospital March 26th, 1889; age 45, single; menstruation ceased at 39 years of age. Three years ago noticed enlargement in abdomen, which rapidly increased in size. Appetite good; heart sounds normal; respiration short of late; heart beat slightly displaced to left and upward; heart sounds normal in rhythm.

March 30th.—Operation. Incision in median line three inches. Edema of lower abdomen; no hemorrhage. Slight adhesions, easily broken up. Cyst evacuated by large trocar and canula. Pedicle fastened to abdominal wall. Time, seventy-five minutes. Weight of fluid $70\frac{1}{2}$ pounds, of sac $7\frac{1}{2}$; total 78 pounds. Recovery good. Dr. Bullard writes: "I have never seen a patient take ether better than she. She is the only patient that I have known to leave the operating room with a better pulse than before operation. When the cystic fluid was being drawn off, the pulse improved perceptibly, and we conclude it must have been due to the relief of pericardial pressure which had embarrassed the heart's action."

You will perceive, hereafter, that this record appears to be antagonistic to my argument. Let me comment upon it at once, and ask you to observe [photograph shown to the Society] that the patient seemed to be in good condition, with a recorded normal heart beat and one evidently able to withstand a decrease in endocardial tension, especially as it was reinstated from its displaced position and, in my opinion, relieved, not depressed, by the removal of pericardial pressure.

CASE III. (with photographs). (Kindness of Dr. W. Gill Wylie.)—Admitted to Bellevue Hospital July 16th, 1889; age 43; married; eleven children; no miscarriages. Not markedly emaciated. About two years ago noticed beginning of enlargement of left abdomen. For the last six months tumor has grown rapidly; four months ago noticed hernia. Denies all pain. She now measures: Greatest girth, 56 inches; ens. cart. to pubes, 38 inches; ens. cart. to umbilicus, 17 inches; umbilicus to right crest of ilium, 13 inches; umbilicus to left crest of ilium, $15\frac{1}{4}$ inches.

July 22d, 1889.—Operation. Ether; small median incision. On opening the peritoneal cavity a large quantity of ascitic fluid drained away. Large tumor in situ. Incision lengthened in both directions. Four large vascular connections with omentum tied. Posteriorly adhesions to the intestines separated at the expense of the tumor tissue. Pedicle tied with Wylie's modified Staffordshire knot, and dropped. Incision prolonged upward, and hernial sac, containing only peritoneal

fluid, was dissected out. Wound closed; glass drain. Recovery good.

CASE IV.¹ (with photographs). (Kindness of Dr. Chas. K. Briddon.)—Girth, 64 inches (5 feet 4 inches); weight before operation, 267 pounds; weight of fluid removed, 129 pounds; weight of fluid lost, 4 pounds; weight after death, 134 pounds; estimated weight of unruptured cyst and cyst walls found at autopsy, 20 pounds; probable total weight of tumor, 152 pounds.

The two main points of this paper are: *first*, an argument that heart failure is due, not so much to the sudden removal of *pericardial pressure*, as to the sudden reduction in the *endo-cardial tension*; *second*, a plea to remove the *fluid in a primary* and the *sac in a secondary* operation, in cases of enormous ovarian cysts.

The theory that heart failure is due to the sudden relief of pericardial pressure is not, I think, well founded. Examples of pericardial pressure, as instanced in extreme tight lacing of our fair countrywomen, do at times cause fainting, etc.; but its immediate and sudden removal only brings relief to the patient, not heart failure. Dr. G. Heinrichus, of Helsingpoor, in a paper entitled "The Effect of Distention of the Abdomen on Circulation and Respiration,"² states that in his experiments, when distention became considerable, the pulse at first increased in frequency, then became fuller, afterwards less frequent, and, before the death of the animal, suddenly smaller. The arterial blood pressure first began to rise when the frequency of the pulse had considerably diminished, and then gradually fell as the pulse became smaller. Dr. Heinrichus gives numerous tracings showing that the abdomen may undergo great distention without abrogating any of the important vital functions.

Let me ask you to admit that the heart is a muscle, subject to the laws of other muscles, and also that it is of the involuntary type, lacking, therefore, the assisting control of the will; that it is a mechanical device used for pumping the blood throughout the system; and that it is more or less governed by the laws of other mechanical engines and machinery. This

¹ Reported in New York Medical Journal, February 8th, 1890.

² London Lancet, November 9th, 1889.

leads to the following statement : All mechanical and muscular devices, while moving heavy weights or meeting a full amount of resistance, when suddenly relieved of a large percentage of that resistance, move rapidly and without control, and the weaker the structure of the machine the more disastrous the result. An engine, in drawing a heavy train, upon the breaking of a coupling dashes forward, often to its own ruin ; a clock deprived of its governing pendulum rattles away the seconds and destroys its mechanism ; a heavy steam pump, upon the sudden breaking of a large main near by, plunges its piston violently up and down when the resistance is suddenly removed. So the heart, governed by the same laws, but lacking the control of the will force, becomes unmanageable by the sudden cutting off of a large percentage of its usual resistance, as in amputations of the thigh, removal of large fibroids, of extended cyst walls. Again, an athlete may go hand-over-hand to the top of a gymnasium upon a rope which fills his hand, yet can hardly lift himself upon a clothes line or wire which does not fill his grasp, and the effort to constantly grasp it gives exceeding pain and fatigue to the muscles of hand and arm. In like manner it is not the loss in the quality of the blood which causes heart failure, but in the quantity of fluid removed ; for immediately that we transfuse milk or salted water, the endovascular tension is restored, the friction increases, and the pulse returns to its normal condition.

Another illustration is that a comparatively small amount of fluid may unbalance or restore the endocardial tension. Thus in venesection we are forbidden by Marshall Hall to remove from the average patient more than fifteen ounces of blood ; and Professor Dujardin-Beaumetz, speaking of cardiopathic patients, says : " I need only call your attention, in this connection, to the palpitation of anemic persons after prolonged losses of blood, to convince you that any modifications produced by blood-letting are detrimental. You will, then, eschew venesection in mitral disease, as augmenting the useless labor of the heart." He also warns against the use of very hot or cold baths, and in speaking of aspiration in ascites says : " I have always observed that patients rapidly become enfeebled under the influence of this operation. And this kind of 'white bleeding' only exhausts the patient and cuts

short his days." Again, Dr. Chadwick cautions us, in transfusing, not to introduce at one sitting more than six ounces, lest too much strain be placed upon the heart. Thus we see that a small amount of fluid readily influences the endocardial tension. Now, in the removal of large fibroids or an entire limb we remove a large frictional surface which the heart is accustomed to have as a balance wheel to its action.

In removing an enormous ovarian cyst, we not only remove a large frictional surface, *but also a large amount of blood from the circulation, even though not a drop be lost.* To illustrate: Recall the appearance of a coarse-grained, very porous sponge; hold it with its section end towards you, and compress it between your palm and fist, so that the extended hand shall represent the abdominal wall, with the sponge channels, as blood vessels compressed by the fist, as the tumor. Now relax the pressure by partially removing the fist, and observe how the flattened and compressed calibres of the sponge pores promptly resume the rounded contour of the cylindrical blood vessels, drinking in large draughts of fluid, air, water, or blood. It is thus that the large areas of sinuses, veins, and capillaries in the abdominal and sac walls, when relieved of pressure, drink in large draughts of tension blood, and, with satiated slothfulness, hold it within themselves and refuse to press it forward. This dilatation of innumerable vessels, not only over the large area of the abdominal and cyst walls, but in the whole extent of the portal system as well, is as truly an internal hemorrhage, as far as endocardial tension is concerned, as though an equal amount of blood had escaped into the abdominal cavity from an insecure pedicle of a patient suffering with a small tumor, with normal abdominal and portal circulation.

It is not surprising that we have the quickened pulse and the panting of the heart from reduced endocardial pressure, calling for brandy and ammonia to support, ergot and digitalis to contract, transfusion to reinforce, and compression to aid in restoring that endocardial tension by which alone life is possible. It is at this juncture that we get the advantage of the copious hot douching of the abdominal cavity, so often urged by one or two of the members of this Society; not in the slight amount of liquid absorbed, for the effect is too sudden, but in the stimulus to the sympathetic nerves, reviving the

tone of the viscera, and also in reducing the calibre of the large vascular system, which, in contracting, forces both backward and onward an amount of blood which must increase the general endovascular tension.

It would seem, therefore, that in removing a large abdominal tumor (or a slight one in case of a faulty heart, where a slight reduction in tension would make an equal heart failure) our aim should be, not so much to restore the abnormal pericardial pressure by the abdominal bandage, as to restore the endocardial tension by it and by stimulants, ergot, and digitalis acting to contract the calibre of the vascular system. It is the belief of the writer that the real action of the abdominal binder is not so much by restoring the abnormal pericardial pressure, as that, by compressing the abdominal and portal systems, it diminishes the area of these vessels, and so restores their frictional resistance and endocardial tension; as, in like manner, bandaging a limb or elevating it increases the tension by exclusion and gravity in the vital organs at the expense of the non-vital.

In the history of the first case it will be observed that the action of the heart was immediately accelerated, not by the slight loss of blood from the abdominal incision, which had been controlled, but by the withdrawal of the fluid, which reduced the frictional resistance, and by allowing the vessels to dilate and thus reduce the endovascular and consequently the endocardial tension. It will be urged that, according to this theory, we should get the same dilatation of the vessels of the sac and abdominal walls after tapping or aspiration—for we practically remove the tumor, as far as pressure is concerned—and that we should have the same rush of blood to these expanding vessels and the same heart failure. *This is most certainly the case*, and life is often jeopardized, and not infrequently lost, from tapping alone where not a drop of blood has escaped. This is one of the strongest proofs I have that this theory is well founded and correct, and is the strongest argument for the double operation.

When we know that the quick removal by tapping of a large amount of fluid from the abdominal cavity, be it ascitic or ovarian, often taxes a feeble heart to its utmost, how can we justify ourselves in adding the mental and physical shock

of immediately entering the abdomen, tearing away adhesions, exposing the peritoneal cavity, and roughly handling the intestines?

It is for these reasons that the double operation should be performed, and that we first remove the large mass of fluid by aspiration, not by tapping, during which we can, by pressure with the many-tailed bandage, fortify the endovascular tension and preserve the frictional resistance in the adventitious sinuses and veins of the abdominal and sac walls and portal circulation. Any other cause of heart failure, such as atrophy, dilatation, fatty degeneration, valvular lesions, anemia, etc., will of course intensify our need of extreme caution. As soon thereafter as the circulation is again established, let the sac be removed by the secondary operation within a few days at most. Let me here say that I do not advocate aspiration instead of operation; but FIRST TO ASPIRATE, AND THEN REMOVE THE SAC in a second and promptly following operation. It will be urged that in aspirating first I run the risk of septic peritonitis and of adhesions. This, in a slight degree, is true; yet I feel that it should have no weight in the balance of argument, for, with the aseptic precautions of the present day, the slight wound of an aspirating needle ought to be perfectly safe. Certainly case 1 shows five *tappings* with no bad results; nor were there any formidable adhesions. Moreover, it is the rule to find that enormous cysts have been tapped or aspirated many times.

I would earnestly urge that in these enormous cysts we abandon the brilliant failures for the conservative successes; that the fluid be first removed by aspiration and not by trocar and canula; that the patient be saved every mental shock possible; and that the heart be allowed to regain the mastery of the circulation before the sac is removed.

It would seem unnecessary to read a paper pleading for a less brilliant and more conservative method of operation in these days when the profession is so keenly alive to the necessity of an early operation, and when one might suppose that there could hardly be more than one or two of the enormous cysts in existence. Yet, strangely enough, these cases are constantly coming to the light. Case 1, it is true, was operated upon ten years since, but all the others were within the past six months;

and, moreover, there is at this time a case of an enormous cyst under the very shadow of the Woman's Hospital, refusing to enter the hospital, fearing an operation which she believes must so certainly prove fatal. Moreover, skilled surgeons still remove these enormous tumors at one sitting. Often, with a good heart, the patient survives; often also, in the class of cases for which this paper is written, patients die who, it seems to the writer, might be saved by a carefully conducted double operation. Since writing this paper I have learned of a case that greatly strengthens my plea for the double operation, recorded by Dr. John Homans, of Boston, in his book entitled "Three Hundred and Eighty-four Laparatomies for Various Diseases," as follows:

"Case 82 was one of the largest tumors I have removed; the solid and fluid contents (removed two days before and at the operation) weighed one hundred and five pounds. The patient is now, five years later, in robust health."

A NEW METHOD—THE INTRA-ABDOMINAL BUT EXTRA-
PERITONEAL METHOD—OF DISPOSING OF THE PEDICLE
IN SUPRAVAGINAL HYSTERECTOMY FOR FIBROID
TUMOR, WITH REPORT OF FOUR SUCCESSFUL CASES.

BY
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(With two woodcuts.)

DR. MARTIN, of Berlin, has enunciated the broad principle, which I think we all recognize, that the only way to finish any abdominal operation is to restore the parts to their proper relations in the pelvis. This has long been the recognized custom in dealing with the pedicle of ovarian tumors. No operator thinks of fastening that in the abdominal wound, except under most extraordinary circumstances. It is dropped back into the pelvis, the parts are restored to their proper relations, and the organs perform their functions free from embarrassment or distortion.

Not so with the pedicle after supravaginal amputation of the uterus. The disastrous consequences from hemorrhage and sepsis that attended the intra-abdominal treatment of the pedicle led to the method of fixing the stump in the abdominal wound. Thus far this extraperitoneal method has given the best results. It is not free from danger, however, the best operators losing from ten to fifteen per cent. Moreover, the objections to it, even in cases that recover, are many. The convalescence is prolonged and tedious. The sloughing stump makes a disagreeable, nasty wound, and after recovery results in an unsightly scar. The constant dragging upon the abdominal wall is also an undesirable sequela. Moreover, as Dr. Wylie has pointed out, the presence of this stump in the abdominal wound favors the production of hernia. The broad ligaments, too, are put upon the stretch to an unnatural degree, and the bladder is compressed and restrained from its proper functions.

There is no question about it—the intra-abdominal method is the ideal treatment. The only condition is, can you make it safe—safe from hemorrhage at the time of the operation, safe from subsequent hemorrhage, and safe from sepsis due to suppuration of the stump?

It is for the purpose of contributing the results of my limited experience in meeting these requirements that I present for your consideration the report of the following four successful cases, which embrace my entire experience in this line:

CASE I.—Ann McE., of New York City, a cook, age 40. Married fourteen years ago; husband lived only five months; has remained a widow since; never pregnant; menstrual history normal. For the past three years has suffered constant backache and difficult and painful defecation; for the past six months, frequent and painful micturition. The latter had so annoyed and worried her, and deprived her of sleep, that she had lost flesh and was in a desperate, nervous condition.

She had consulted a prominent gynecologist of this city, who told her she had a tumor and sent her to the Woman's Hospital for observation. After repeated examinations she was finally dismissed with the opinion that if any operation were attempted she would die upon the table; to go home and have her teeth repaired and let herself alone. The day after this, May 26th, 1888, she appeared at my office, told her story, and wanted to know if I could do anything.

Upon examination I found a hard, irregular fibroid tumor, with deep serrations, entirely filling the pelvis, and so firmly wedged in that even the slightest motion was impossible. Large nodules also reached up into the abdomen. I told her I believed I could relieve her; that the tumor could probably be lifted out of the pelvis, and, if favorable for complete removal, could be taken away. She only too gladly accepted the proffered relief and entered St. Elizabeth's Hospital. Three days later, May 29th, with the assistance of Dr. Dudley, Dr. Tulley, and others, I operated. The tumor was, with the greatest difficulty, lifted out of the pelvis. But once in the abdomen, it occupied so much space that it seemed best to attempt its removal.

The first step was to dissect off the bladder, which had spread itself all over the anterior face of the tumor to the height of six or seven inches. This was done by following the curve of the base of the bladder in an elliptical incision through the peritoneum across the face of the tumor, and dissecting off the bladder down to the vaginal junction. An elastic ligature was then thrown around the entire mass, including the ovaries and tubes of both sides, and the main part of the tumor cut away. Before severing the connection of the broad ligaments, the uterine extremity on each side was grasped by a strong clamp forceps to prevent its slipping out of the ligature. The pedicle was now transfixed below the elastic ligature, but within the flap, with strong Chinese twisted silk, and tied on either side like the pedicle of an ovarian tumor. The elastic ligature was then removed. There had been no loss of blood except what escaped from the tumor when it was cut away, and a constant slight oozing from the flap that had been dissected off with the bladder.

The stump was then trimmed down as near to the ligature as was deemed safe, and the point of opening of the cervical canal thoroughly cauterized with pure carbolic acid. The large extent of raw surface on the bladder flap made it necessary that it should be disposed of in some way, and it occurred to me that it could be drawn over the top of the stump like a hood, and, if drawn tightly enough, primary union might be secured and the distal end of the stump nourished through the flap. This was accordingly done, the flap reaching well down on the posterior surface of the stump below the exit of the ligature, where it was firmly stitched along its entire border with continuous catgut suture. The stump was thereby shut out of the peritoneal cavity, and was dropped back into the pelvis. The abdominal wound was closed with silk and the patient put to bed. The tumor was a hard, multiple, subperitoneal fibroid, extremely irregular in shape, and weighed six and one-half pounds.

The patient rallied well from the operation, was free from pain with the exception of slight backache, and had no untoward symptoms till the fourth day, when the temperature went up to $101\frac{1}{2}^{\circ}$, and the fifth day to 102° . This meant suppuration in the stump under the flap, with danger of the pus bursting into the peritoneal cavity unless an exit was made for it some other way. I therefore lifted the patient on to a table, slipped a bivalve speculum into the vagina to expose the cervix, through which I passed, without difficulty, a Simpson sound and then the steel dilators. A gentle amount of pressure gave exit to about a half-ounce of pus and broken-down tissue. A double female catheter was then passed and the cavity washed with carbolyzed solution, after which a nickel drainage tube about two inches in length was inserted, to which was attached a rubber tube leading out of the vulva to carry off the discharge and permit of frequent washing. The dilatation was repeated every third day and the cavity thoroughly washed through a catheter for four sittings, after which the temperature continued normal and the discharge was reduced to that of a slight leucorrhea. The patient regained her strength rapidly, was sitting up at the end of three weeks, and upon the 29th of June, just one month from the day of operation, she rode in the Broadway street-cars to Chambers street and back, walking to and from the hospital. Shortly after this she went to the country for the summer. In September she appeared at my office, fleshy and well, but complained of a slight moisture about the vagina. Upon examination bimanually I found the stump smooth, freely movable, and about the size of a virgin uterus. Upon passing the speculum a white silk thread was discovered presenting at the external os, which, upon being lifted out, proved to be the ligature. The patient has continued in perfect health, and, despite the fact that she has neither uterus, ovaries, nor Fallopian tubes, was a second time joined in happy wedlock in October last.

The success that attended this case led me to think that, out of the resources which the exigencies of the case compelled me to adopt, there might be developed a systematic treatment for the stump. And first I decided that, since the stump beyond the ligature failed to be nourished from this large and vascular flap, it would be useless to expect it in any case if the ligature were made tight enough to insure against hemorrhage. Suppuration must be provided for. How, then, can it best be prevented from breaking into the peritoneal cavity?

It will be remembered that the pedicle, ligature, and all the raw surfaces were covered by the flap, so that there was not

even a needle puncture through the peritoneum except along the edge of the flap where it was stitched by the catgut suture. This seemed to me an important feature, and could be secured in any case by properly reflecting the peritoneum around the stump before transfixing by the ligature, and then passing the ligature between this peritoneal sac and the uterine tissue. By bringing up the reflected peritoneum afterward and stitching it carefully along the top of the stump, no escape of pus need be feared. With the peritoneal cavity thus properly protected and the cervix always accessible for drainage, a safe method, at least, seemed to be afforded.

With these points settled in my mind, I eagerly awaited the coming of another case. Fortunately I had not long to wait, for my first case fell in with a woman during the summer whose symptoms corresponded so closely with her own that she made a diagnosis of fibroid tumor and sent her to me in the fall.

CASE II.—Mary D., New London, Conn., age 41. Married twenty-five years ago. Widow for past fifteen years. Had three children, the last seventeen years ago. Menstruation regular, flow normal. Seven years ago had "inflammation of the womb," and was treated in St. Francis' Hospital, this city, and later at Bellevue. Has suffered constantly since with intense pain through the pelvis and down the legs, occasional retention of urine, and excessive bloating of the bowels. Upon examination I found an almost perfect fac-simile of the condition described in the first case, and advised immediate removal. Upon setting forth to her the dangers of the operation, she decided to wait, and left the city. The following spring she returned, however, said life was a burden and she would take the risk. Accordingly, I made her ready, and operated May 2d, 1889, with the assistance of Dr. Janvrin, Dr. Talley, and others. The tumor was extremely irregular in shape, and so firmly wedged in the pelvis that it was lifted up only with the greatest difficulty, but there were no adhesions.

After the tumor was delivered through the abdominal wound, an elliptical incision was made through the peritoneum across the anterior and posterior faces of the tumor successively, and the peritoneum stripped down below the internal os. The uterine appendages on both sides were lifted up and an elastic ligature thrown around the entire mass, sinking it well down to the bottom of the anterior and posterior flaps. The main mass was then cut away, care being taken to catch the ends of the broad ligaments as they were severed, to prevent their slipping out of the ligature.

The stump was then transfixed with Chinese twisted silk inside of the flaps below the elastic ligature, and securely tied. The elastic ligature was now removed, and the stump trimmed down, and the cervical canal touched with pure carbolic acid. The flaps of peritoneum were then brought up and securely stitched together with continuous catgut over the top of the stump, thus shutting out the ligature and all raw surfaces, and the stump dropped, abdominal wound closed, and usual dressings applied. Tumor weighed seven pounds.

Patient gave no abnormal symptoms till the fourth day, when temperature rose to 101° . She was immediately placed upon the table, and the cervix freely dilated, drained, and irrigated as in previous case. The ligature, with a sloughing mass of tissue, came away on the ninth day through the cervix. The discharge from that time on was only slight in amount, and the cavity rapidly filled up. Convalescence was uninterrupted, and she left town at the end of the fourth week. I saw her September 1st: stump smooth, freely movable, no adhesions, general health excellent.

CASE III.—Delia H., single, 29 years of age. Menstruation appeared at 16; always regular, normal in amount. For two years has had extreme dysmenorrhea and occasional retention of urine. For past six months pain has been almost constant, and she had to give up her work, which was that of a cook.

She was put into my hands through the kindness of my friend Dr. Latham, who had already diagnosed fibroid tumor and sent her to St. Elizabeth's Hospital. The tumor was a hard, multiple fibroid, and resembled closely the two previous cases by being immovably wedged in the pelvis. With the assistance of Dr. Latham, Dr. Wiener, and others I operated May 27th, 1889.

The method as previously described was carried out in every particular, with one slight modification. While I was trimming down the stump my assistant unwittingly caught hold of the ends of the ligature on his side—which had not yet been cut away—and lifted up so strongly that the broad ligament slipped out. A sharp hemorrhage immediately ensued, and the contents of the pelvis were quickly obscured from view. This was promptly controlled by grasping the broad ligament in my hand and holding it till the pelvis could be cleared and forceps applied. These tissues were then quilted down with catgut and drawn up tightly to the stump. When now I attempted to close the peritoneum up over the top of the stump, I found it was not wide enough to completely cover in the puckered-up tissue of this broad ligament at the side of the stump. I therefore extended an incision from the edge of the flap out on to the face of the broad ligament, both ante-

riorly and posteriorly, just going through the peritoneum. With continuous catgut suture I then drew up the edges of this flap and united it to the corresponding one over the free border of the broad ligament, and so extended along the line of suture across the top of the stump. This was then dropped, the omentum drawn down and spread out, the abdominal wound closed, and usual dressings applied.

Patient rallied well and had no untoward symptoms till the fourth day, when the temperature rose to 100.5° . She was immediately placed upon the table, the cervix dilated, and the cavity under the flap irrigated and drained as in the other cases. The complication to the left of the stump made me a little cautious in dilating, lest I should open a lead for the pus

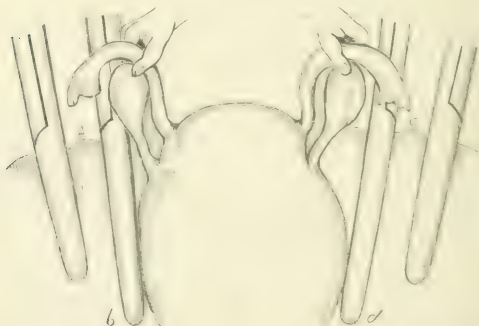


FIG. 1.—Posterior view. Forceps in place. The broad ligament is then cut down, between the forceps, *a* to *b* and *c* to *d*. The elastic ligature is then thrown around, and the entire mass cut away. (Hands drawn disproportionately small.)

off into the base of the broad ligament. The progress was consequently a little slower, the main slough and ligature not coming away till the seventeenth day. But at no time did the temperature go above 102° . She was out of bed and about the room in four weeks, but did not leave the hospital till July 12th, when she came to the seaside hotel where I was stopping, to see me, and then sailed for Europe. A letter received since announces her strong and well.

CASE IV.—MRS. A., Long Island, 35 years of age. Married sixteen years, never pregnant. Had posterior section done upon the cervix for sterility two years after marriage, and again eight years later. One year ago she began having severe

pain during the week preceding menstruation, attended with violent headaches. These have increased in severity and in duration. Six months ago she called a doctor to relieve her pain. He examined and told her she had a tumor. In October she was seen by Dr. Latham, who sent her to a private hospital in 38th street, prepared for operation. I saw her October 26th, and the following day, October 27th, 1889, I opened the abdomen. The tumor had the color and shape of a pregnant uterus at five months, and reached as high as the umbilicus. I did not deliver the tumor through the abdominal wound, but examined it *in situ*. The peritoneum and immediate underlying tissue slipped so easily upon the deeper structure that, even with one hand slipped down behind the tumor and the other in front, I was led to believe it was intra-uterine. The fact that my examination of the day before had been hurriedly made, in the poor light of the late afternoon, made me doubtful of my previous judgment. I therefore closed the wound,



FIG. 2.—Showing ligature applied and stump trimmed down; the lower part of broad ligament containing uterine arteries at either side of the stump. The raw surfaces are then whipped over and over with catgut from *a* to *b*; the anterior and posterior flaps being caught up and stitched along the dotted line, and the continuous catgut continued to *d*.

quite confident that I should be able to remove the tumor *per vias naturales*. But upon turning her upon the side and dilating the cervix, what was my surprise to find that I could pass neither the sound nor my finger over two and one-half inches, and that into a cavity that seemed perfectly symmetrical.

The patient was a delicate, weazened-up little woman, and I deemed it wise to do nothing further. She was, therefore, put to bed. She recovered nicely from this exploratory performance, and insisted on having the tumor out. Three weeks later, November 16th, with the assistance of Dr. Dudley, Dr. Latham, and others, I opened the original incision and delivered the tumor through it. The outline of the uterus could be seen low down in front, the tumor springing from its entire posterior surface. But in its growth the tumor had failed to carry

up with it the broad ligaments. They were, therefore, very short, and could not be embraced in the ligature without great strain.

I therefore grasped the broad ligament outside of the ovary and tube with a strong clamp forceps reaching down two-thirds of its depth, and, after similarly placing another near to the mass (Fig. 1), I cut the broad ligament down as far as their points. The other side was treated similarly, and then the lower angles of these incisions were connected in a curved line, first across the anterior face of the tumor, and then the posterior through the peritoneum—to form the flaps for the stump—and the peritoneum reflected. An elastic ligature was now thrown around the mass inside these flaps, and forced well down. The main part of the mass, including ovaries and tubes, was cut away. The pedicle was then transfixed inside the flaps with strong Chinese twisted silk, and tied on either side, the elastic ligature moved, and the stump trimmed down. The open ends of the broad ligaments were now to be disposed of. First the ovarian arteries were searched out and ligated with catgut. Then the flaps were brought up into position and trimmed to fit.

Commencing then at the upper border of one broad ligament, the raw surface was covered in by an over-and-over continuous stitch of catgut down the width of the ligament, then over the top of the stump, stitching firmly the flaps, and then up the width of the other broad ligament to its free border (Fig. 2); so that all there was to be seen in the bottom of the pelvis was smooth peritoneum, with this continuous line of catgut suture running across from side to side.

The remainder of the operation was completed as usual, and the patient put to bed. The tumor was a fibro-myoma and weighed four and one-quarter pounds.

Upon removing the clamp forceps on the left broad ligament, when I had reached the tip of it in the process of whipping over and over the edges, there came a sharp hemorrhage from the uterine artery on that side, which I had evidently cut when I severed the broad ligament. It was quickly caught, however, and ligated with catgut. Very little blood was lost.

Temperature rose to 101° on the fifth day. The cervix was therefore dilated and the cavity under the flap irrigated. Instead of using a drainage tube, however, I had a large size of Outerbridge's cervical wire expander made, and inserted it, thinking the constant pressure of the spring would hasten the separation of the stump. Two days later the temperature rose to 103½°, but came down promptly after irrigation. The ligature and slough came away on the fourteenth day. The patient made an uninterrupted recovery from that time on.

and left the hospital December 23d, thus making the fourth successive case of recovery by this method.

In regard to the operation itself, while each of the different features has been used by different operators, I know of no one having combined them all into a systematic method till I did so myself. Dr. Dudley assisted me in my first operation, as he did also in the last. At the time of the operation we discussed the various steps to be taken, and have frequently since talked over the features of the proceeding that constituted the essentials of success in it. He has employed it in a number of cases since then, but I have never seen him use it.

It is an intra-abdominal method, but, with equal truthfulness of description, is also extraperitoneal. It is, therefore, well described by the name "the intra-abdominal but extraperitoneal method"—a title which Dr. Dudley has suggested.

The advantages are that it has all the elements of safety that any of the operations in use have, and, I believe, more; moreover, it leaves no ligature in the pelvis to give trouble; and, above all, it restores the organs to their proper relations in the pelvis.

A CASE OF INVERSION OF THE NON-PUERPERAL UTERUS.

BY

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HAVING recently had the fortune to treat a case of inversion of the non-puerperal uterus, I wish to present a report of the case, and supplement it with a few remarks upon the etiology, diagnosis, and treatment of this exceedingly rare affection.

Late in the evening of August 31st, 1889, I was called to see Miss H. (a fast young girl, who had previously had at least one abortion) in consultation with Dr. Drummond, who had himself seen the case for the first time during the day. The girl was much emaciated and quite anemic. Her temperature was 100°, pulse 120. Many of her statements were palpably false, and therefore I will not attempt to give a history of her symptoms.

An intolerable, putrefactive odor pervaded the house, the source of which the doctor had previously discovered. He turned back her clothes, disclosing a tumor between the legs as large as a child's head, the surface of which was covered with offensive pus and broken-down tissue. The tumor was drawn tightly against the vulva by a pedicle which nearly filled the vagina and extended upward farther than I could reach. I directed the parts to be irrigated with bichloride solution, and left the case until daylight for further examination.

The next morning I visited the case, accompanied by Drs. McCrea and Drummond, prepared to remove the tumor if it turned out as I suspected it to be—a uterine polypus with ordinary attachments. We placed her on a table in a good light, in Sims' position, and made a thorough examination. The pedicle terminated very abruptly at its insertion in the tumor, and we found it continuous with the vaginal wall at the upper extremity. A careful search with the fingers and probe failed to discover an entrance to the uterus, and an examination through the thin abdominal wall was equally unsuccessful in discovering the body of that organ. Our diagnosis was fibroid tumor with inversion of the uterus.

Directing the patient to have the vagina and tumor irrigated every two hours with a weak bichloride solution, and placing her on quinia sulphate in small doses, we appointed an operation for the next day. The next morning our patient was in better general condition. The odor was imperceptible and the prospect of a successful result more favorable.

Assisted by Drs. McCrea, Drummond, and Vliet, who administered the anesthetic, I dissected away the tumor, first tying a piece of rubber tubing around the uterus to control hemorrhage. The dissection was somewhat difficult, it being impossible to distinguish between the tumor and uterine tissue. When the dissection had been carried as closely as we considered safe, the ligature was removed, the hemorrhage arrested with Monsel's solution, the vagina irrigated with bichloride solution, carefully dried, and packed with antiseptic lamb's wool rolled in boracic acid and alum. The uterus could now be distinguished through the abdominal wall, with a cup-shaped depression at the fundus. The weight of the tumor was ten ounces. The packing was renewed every forty-eight hours for a week, when the uterus was found partially replaced, the probe being admitted one inch. A small portion of the tumor was still attached to the fundus, which I carefully dissected away, drawing the uterus down with a vulsellum for that purpose. The packing was continued three weeks longer, when the uterus was found completely restored.

At no time after the operation did she have elevation of temperature, and the progress to perfect health was rapid.

In the majority of cases, as in the one just reported, a fibroid tumor is the cause of this condition, although several well-authenticated cases are recorded in which inversion occurred in women who had not been pregnant, and whose uteri contained no tumors or foreign bodies.

The body of the uterus, it would seem, must become much softened from disease before such an accident could occur.

The question of diagnosis is a most interesting and important one, as the consequences of mistaking this condition for one of fibroid polypus, and cutting through the uterus in mistake for the ordinary pedicle, would be most disastrous, only one in three recovering from this operation. In my case, if the tumor had been still in the vagina the diagnosis would have been exceedingly difficult, as its great size would have completely filled that cavity. It would probably have been necessary to drag the tumor through the vulva before a positive diagnosis could have been made. In an ordinary case, if the possibility of this occurrence is always borne in mind, it is scarcely possible to make a mistake. The continuance of the upper extremity of the tumor with the vaginal wall, the impossibility of gaining entrance to the uterus, the absence of the body of that organ from its usual position, will all point to this condition. If the cup-shaped depression can be felt through the abdominal wall, the evidence may be considered conclusive. The great danger lies in the surgeon not thinking of the possibility of this occurrence on account of its rarity, as in the case of Willard Parker, reported in Thomas' work on "Diseases of Women": "A young woman, who had borne one child seven years previously, and who had never had any recognized uterine disease, while making a violent effort in rolling tenpins suddenly felt something give way within her, after which she suffered the most intense pain and became completely disabled. Dr. Parker, being called to see her, after a hasty examination coincided with the opinion of the attending physician that a polypus had been suddenly expelled and was hanging in the vagina. Impressed with this belief, he removed the whole mass, when, to his surprise, he found he had in his hands the inverted uterus with its tubes

and ligaments. The patient recovered without any bad symptoms, and subsequently menstruated regularly."

The treatment of the inversion adopted in my case is the same as that followed successfully by Dr. C. C. Lee in two cases reported to the New York Obstetrical Society in 1888, and published in the *AMERICAN JOURNAL OF OBSTETRICS*, vol. xxi., page 616.

If the uterus is softened and diseased, it is not safe to make prolonged manual efforts at reposition, and it seems probable that in the majority of cases spontaneous return will take place if the organ is gently supported by an antiseptic elastic tampon. Should this desirable event not take place after several weeks' trial, efforts at manual or instrumental reposition can still be made. An occasional case will occur in which all efforts will fail, as in one reported in the *Annual of the Medical Sciences* for 1889 by Mundé. After faithfully trying continued elastic pressure, taxis, and Thomas' method (dilatation of the ring through an abdominal incision), Dr. Mundé removed the ovaries and tubes, closed the abdominal incision, and then passed an elastic ligature around the cervix. The uterus came away in shreds by the thirteenth day, and the patient recovered. This was a case of inversion of the puerperal uterus.

CORRESPONDENCE.

PELVIC MEASUREMENTS VS. CESAREAN SECTION.

TO THE EDITOR OF THE AMERICAN JOURNAL OF OBSTETRICS.

SIR:—In the interest of scientific obstetrics I wish to call attention to the pelvic measurements given as an indication for Cesarean section on page 237 of your last (March) issue. The sp. i. and cr. i. are given as, respectively, 24 and 26 cm. This would indicate a generally contracted pelvis of moderate degree, in which a diagonal conjugate diameter of 8 cm. would be scarcely conceivable. If the pelvis were rachitic, 2 cm.

should be subtracted from the diagonal conjugate, as the conjugate symphyseal angle would be increased, leaving a true conjugate of 6 cm., through which a living child could not be born, even though it were of "puny size." The measurements given are, in either case, very unusual, if not impossible, and should be accompanied by an explanation.

Respectfully,

BARTON COOKE HIRST, M.D.

248 SOUTH 17TH STREET, PHILADELPHIA, PA.

TRANSACTIONS OF THE NEW YORK OBSTETRICAL SOCIETY.

Stated Meeting, December 3d, 1889—Continued.

DR. G. E. ABBOTT read a paper entitled

HEART FAILURE IN THE REMOVAL OF ENORMOUS OVARIAN CYSTS.¹

DR. A. P. DUDLEY said he thought the paper a valuable one. He had had but one case of immense tumor of the kind under discussion, and he believed that if he had followed the advice contained in the paper his patient would have lived. The tumor in this case weighed seventy-eight pounds, more than the weight of the woman. She rallied from the shock of the operation, and lived five days. Just what was the cause of her death he was unable to say, since an autopsy was not obtained. In fact, he did not think death after such an operation could be attributed to any one cause as a rule. There was the influence of the anesthetic, exposure of the intestines and of a large part of the bodily surface to the atmosphere or wet, the loss of blood, and, above all, the removal of pressure on the portal circulation. He did not believe the heart failure was due to the actual loss of blood, for that was very small usually. In fact, one could, before removing the sac, express all the blood back into the circulation. But the danger came, he believed, from removal of pressure from the intestines, mesentery, abdominal viscera in general, and consequently from the portal circulation where the venous blood reaccumulated, having an influence on the heart like drawing the blood from the arterial system. This, too, was why we could not restore the patient by stimulating the heart, for by this means we could not reach the blood vessels where stasis existed. He was aware that some German surgeons believed the shock to be due largely to the anesthetic, others to long exposure of the intestines and peritoneum, and still others to loss of blood. Regarding the cause as a combined one, Dr. Dudley strongly advised the use of hot water, long continued. He not only washed out the pelvis with hot water, but filled the abdomen with it, and kept it filled for some time. This not only stopped hemorrhage and prevented shock, but also for a time interfered with the accumulation of blood in the portal circulation after removal of the tumor. He believed, however, that Dr. Abbott had struck the right note when he suggested a double operation. There was, he thought, but one objection to it—namely, that one could not say beforehand the fluid was not colloid and therefore would refuse to pass

¹ See original article, page 364.

through the aspirator. If it should prove to be colloid, it would be necessary to do laparotomy or use a large trocar. He would not operate again in such a case unless the patient were where he could personally superintend the after-treatment.

DR. MALCOLM MCLEAN thought the sympathetic system had not been taken sufficiently into consideration in the discussion. He believed, also, that it was through its influence upon the abdominal ganglia of the sympathetic system that hot water proved so beneficial as it did in these abdominal operations. The paper, however, treated of the subject in an excellent way, and he did not doubt that the influence upon the portal circulation, as described by both Dr. Abbott and Dr. Dudley, had much to do with the bad results.

DR. H. T. HANKS had listened with considerable interest to the paper and the discussion. He had seen two cases of enormous tumors, one in his own practice, the other while Dr. Bullard was operating, besides some in the care of different gentlemen at the Woman's Hospital. He had been surprised how very differently removal of the tumor affected different patients. Occasionally a tumor was removed without apparently producing any shock whatever. Dr. Bullard's patient carried a better pulse, it appeared, when she left the operating room than when she entered it. The patient he operated upon had come sixty miles from the country the day previously. The tumor weighed about forty pounds. Every portion of it in front was adherent to the abdominal walls. The intestine could not be reached until he got to the right iliac fossa. Evidently the amount of traumatism from separating so large a surface of adhesions was great, yet the patient's pulse was better an hour after the operation than it had been before. She made a very satisfactory though slow convalescence. Occasionally, however, he had seen the condition spoken of by the author follow the operation. If one could be absolutely sure that the shock and heart failure were always due to removal of pressure, the secondary operation would be an advantage. He remembered that some one had advocated and practised first tapping the tumor before operating. He thought this was entirely justifiable, yet he believed that some patients would not permit removal of the tumor after the comfort afforded by the tapping. At present he occasionally saw a woman who had an abdominal tumor weighing about ninety pounds, yet she had for two years rejected his advice and that of Dr. Lee to have it removed. To tap an abdominal cyst, as Dr. Abbott had said, should now be attended by a minimum amount of danger; twenty years ago it was not. Yet he could recall a case in which he removed five to fifteen pounds of fluid eleven consecutive times from a multilocular tumor without injury to the patient. She finally died from the growth of the solid portion of the tumor.

DR. FLORIAN KRUG approved of the double operation, but would object to the use of a large trocar. He would suggest that it would be much better to make a small incision, say an inch or an inch and a half long, open the peritoneum and stitch the wall of the cyst to the peritoneum, and keep the wound open two days by antiseptic gauze until convinced that there was firm adhesion between the wall of the cyst and the parietal peritoneum. He would then open the cyst and let out its colloid contents; then, after he could feel that there would be no alarming symptoms from a laparotomy following the depletion of so large a cyst, he would do the radical operation. He thought it would be pretty risky to use a large trocar, which might be necessary if colloid fluid were present.

DR. RALPH WALDO thought there would be danger of septic inflammation following the method proposed by Dr. Krug.

DR. KRUG said all precautions would be taken against introducing septic matter from without. He believed the cyst opening could be closed after the contents had been withdrawn, so that no danger would arise.

DR. DUDLEY said he understood Dr. Abbott's method to imply the removal of the tumor within a day or two after the tapping. He would seriously object to the method which Dr. Krug had proposed, for reasons stated by Dr. Waldo. He had seen one cyst treated in that manner, and

the result was that it suppurated and the patient died of septicemia. However careful one might be, he did not believe that air could be prevented from entering the sac, which would expose the patient to the dangers of suppuration. If one made an incision an inch or an inch and a half long, why not finish the operation at once? Nor would he allow the patient to go a week or a month before removing the tumor, after having withdrawn its contents.

DR. BUCKMASTER wished to place himself on record as opposed to tapping, for he regarded it as a dangerous operation, although a small needle were used. The sac wall was thin, and might recede and tear around the puncture. If he wished to empty its contents before removing the tumor, he would do as Dr. Krug had suggested—place the sac in a position in which there would be no danger of the fluid escaping into the abdominal cavity. He had seen death follow the puncture of a sac with an aspirating needle, or, he might say, a large-sized hypodermatic needle.

DR. H. J. BOLDT remarked that different cases terminated differently, no matter how large or how small the tumor. While theoretically the suggestions put forward by Dr. Abbott were correct, and might prove so in practice, yet it was his belief that we should not expose patients to the risk of tapping. We should go ahead and do the radical operation, and the great majority of cases would get well. For reasons stated by Dr. Buckmaster, he would not resort to tapping, even with a small needle.

DR. HANKS did not think much danger was attached to tapping. A great many patients in the Woman's Hospital and others had been subjected to repeated tapplings without any ill effects.

DR. E. H. GRANDIN said the paper brought up the old question of tapping or no tapping. That question had been settled adversely to tapping a number of years ago, before the era of strict antisepsis. One had only to look over the records of ten, twelve, or fifteen years ago to appreciate how many deaths took place from tapping ovarian cysts, either directly or indirectly. But to-day we could not view the matter in the same light. The precautions taken to-day were entirely different. Cleanliness was insisted upon strictly, while ten and fifteen years ago it was only aimed at, not insisted upon. In the light of the experience of fifteen years ago tapping might be condemned, but he did not think it could be to-day. He believed that Dr. Abbott was both theoretically and practically right when he spoke of tapping *large* ovarian cysts. He did not think the argument would apply to smaller ones. Women who were carrying these immense parasites were in an extremely reduced condition, and would likely succumb to any operation, however slight, possibly from heart failure. They might succumb even to tapping.

Analogically we met with the same experience in ascites. It was well known that when one suddenly emptied the abdomen, enormously distended with ascitic fluid, particularly if the patient were in the erect position the lowering of the tension within the abdomen would lead to heart failure. He questioned whether in cases of large ovarian cysts sudden aspiration of the contents would not lead to heart failure. He agreed with Dr. Abbott that it was best to tap antiseptically with the aspirator, and then within a few days, before much mischief could ensue, proceed to do the major operation. He could not approve of the method suggested by Dr. Krug. He would fear sepsis, and would expect it. If he made an incision into the cyst, he would want to proceed at once to remove it, and not leave it within the abdomen.

DR. G. M. TUTTLE said he had never had the good fortune to remove an ovarian cyst which could be called enormous. He could, however, relate an experience of not many weeks ago which pointed out pretty clearly the danger which the paper dwelt upon of opening the abdomen filled with fluid. In that case there was enormous distention of the abdomen by blood, although an exact diagnosis could not be made until after the belly had been opened. When the peritoneum was touched by the knife, it burst the full length of the abdominal incision, so great had been the tension. An immense mass of black, grumous blood poured out suddenly, and the pa-

tient's heart stopped almost instantly. The gentleman giving ether said she was in collapse; the operation was discontinued for the time being, Dr. Tuttle held the walls of the abdominal wound together, hot-water injections were made, and artificial respiration resorted to. When the heart renewed its function, he washed out the remaining clots with very hot water, and left the water in the abdomen while introducing the sutures. No bleeding point was found. The pulse, however, did not fully return, and the patient died after some hours. He regretted that he did not perform transfusion. The case illustrated the danger of suddenly emptying the highly distended abdomen of fluid, whether in the peritoneal cavity or in a sac.

In the light of the discussion to-night, and perhaps from preconceived opinion, his own judgment, he said, would lead him not to tap a very large ovarian tumor. Believing, as he did, in the great safety attending abdominal surgery carried out with thorough antiseptic precautions, personally he would not care to tap these enormous tumors, whatever might be the arguments advanced in favor of it. His own feeling would be to make the abdominal incision and remove the tumor. Many patients would object to being anesthetized more than once, and to tap without an anesthetic was rather a severe procedure. He did not think it impractical, in cases of ovarian tumor, to follow the course indicated by Dr. Abbott, to let the fluid contents drain off gradually before proceeding to remove the tumor. In tumors containing colloid material, the contents became thinner usually as the tumor grew larger, and would be likely, therefore, to escape through the aspirating needle. While he did not think he would feel at all timid about first tapping the tumor, if he believed it to be desirable, yet his judgment would lead him to do but the single operation. He would not be hasty in the removal of the tumor with its contents; it would be better to let the contents gradually escape. In Germany he had many times witnessed surgeons take the knife, make an incision into the abdomen six or eight inches in length for the removal of an immense cyst, then turn the patient on her side and let the fluid gush out in large quantities. He believed that in cases of large tumors that was dangerous. The tumor should be emptied gradually by a fine trocar, and then immediately removed. But he would not like to tap the tumor one day and remove it on another. The danger of such a course was made apparent by analogous and more common cases, namely, those of great distention from ascites. In one instance he perforated the intestine, and the opening could only be closed by suture. He saw no reason why the ovarian sac, if perforated by the aspirating needle, might not go on leaking and thus seriously complicate matters. He would, therefore, prefer the immediate operation.

Dr. W. E. BULLARD said, regarding the patient of his referred to by Dr. Hanks, that the woman was in good condition before the operation, and the house surgeon stated that the pulse was better after removal of the tumor than before, although the tumor was of enormous size, weighing seventy-eight pounds. It seemed to him that in the cases described by the author of the paper there was greater exhaustion of the muscular system, including the muscle of the heart, than in his own case, and that might account for the greater depression after the operation in them. Judging by his own case, which was the only one he had had with tumor of so great a size, he would prefer to remove the tumor at once. Regarding the character of the fluid, it was too thick to have come through the aspirating needle.

He remembered to have often seen heart failure following tapping of ascitic fluid in years past. In boys, for instance, he had sometimes found it necessary to place the finger over the end of the trocar to stop the flow of the fluid, on account of the weakness of the pulse. He supposed it was taking the pressure off the heart that was embarrassing its action. Possibly, however, Dr. Abbott's explanation was the true one, that the trouble was due, not to taking off the pressure from without, but that it was endocardial. He would judge that in cases of large cysts preliminary tapping would be the safer method, yet his own case would point just the other way.

Dr. DUDLEY said he did not wish to be understood as advocating the tapping of these cysts with the trocar. He believed there was all the dif-

ference possible between tapping in this manner and aspirating with a fine needle. There was danger with the trocar, particularly if the cyst walls were thin, for there was likely to be leakage. If a small needle were used, being inserted where there was absence of tympanitic sound, care being taken not to move the solid tumor, there would be little or no danger. He did not think the danger was at all comparable to that attending tapping and removal of the sac at the same operation. He understood Dr. Abbott to mean aspirating and not tapping, and then only in cases of immense tumors, to permit of accommodation of the circulation to the diminished pressure in the abdomen before removal of the sac, the major operation to be done the next day.

DR. TUTTLE said he had had in mind both procedures, tapping and aspirating. He thought the argument had been fairly well presented by the last speaker, but not perfectly. If one considered the length of time required to drain a tumor weighing eighty pounds through an aspirating needle, he would recognize the propriety of using a small trocar in the manner he had indicated. Those who had tapped in ascites would recall the difficulty of even serous fluid escaping through the instrument, especially if it were a fine aspirating needle. It was necessary to turn the needle about and encourage the fluid to escape. The difficulty would be likely to be greater in an ovarian cyst, where the fluid might prove of the consistence even of jelly. Then the objection that fluid would be likely to escape into the peritoneal cavity was a good one. This was the chief reason why he would not like to do the double operation, whether the first were termed aspirating or tapping.

DR. KRUG added that if the fluid contents were perfectly clear and bland no harm would result, even if a little leakage did take place after tapping. But we could not tell in advance what the contents were, and peritonitis might result from the least amount of leakage. He had distended the bladder of the hog with colored fluid, then aspirated it with the finest needle (through the abdominal walls), made very little pressure, and yet, on examination, he found that a good deal of the colored fluid had escaped into the abdominal cavity. Therefore, if one did not feel certain that the contents of the tumor were quite harmless, he should in any event take precautions to prevent the escape of any of the fluid into the peritoneal cavity. Without such precautions he believed the danger of aspirating would be greater than that attending removal of the tumor at once.

DR. BOLDT thought the experiment made by Dr. Krug on the distended dead bladder was hardly comparable to aspiration of a cyst on the living subject. Leakage would be more likely to take place in the former instance, because of loss of resiliency in the muscular fibres of the viscus. Yet Dr. Krug was quite correct in the statement that one could not be assured some fluid would not escape in aspiration on the living subject. It would require but a few drops containing pathogenic micro-organisms to set up peritonitis. Until further experience had shown the superiority of the method suggested in the paper, he would prefer immediate removal of the tumor.

DR. GRANDIN asked whether such large tumors did not usually occur in elderly women, and, if so, whether it would not be of little consequence if they refused the major operation on account of the comfort experienced from preliminary tapping. They would, at any rate, escape the greater risk attending extirpation.

DR. HANKS mentioned some cases in which ovarian cysts had been tapped a number of times without inflammation or bad results following. The first which he saw was at the beginning of his practice. He tapped the tumor several times, under the impression that the case was one of ascites. The patient lived to be tapped eleven times.

THE PRESIDENT said that up to twelve years ago, and through a period of about eight years, he had tapped quite a number of ovarian cysts himself, and had assisted Dr. Peaslee in many others, amounting altogether probably to as many as forty or fifty cases. He remembered but one in which any serious trouble resulted. That patient took on doubtless what

we would now call septic inflammation of the interior of the sac, and died. He was aware that at present there was a good deal of prejudice against tapping, but he thought that, even in the light of the experience of the past, it was rather overdrawn, at least where antiseptics were employed. Although he was fully convinced that tapping with a small trocar or aspirating with a middle-sized trocar was attended by very slight danger of septic trouble, still he would not be inclined to do it; he would be inclined rather to follow the method spoken of by Dr. Tuttle, namely, to draw the contents from the sac very slowly, watch the patient, and if any indications of heart failure were present, take the necessary steps to counteract it. He was strongly impressed with the idea that even in cases of enormous cysts the danger from heart failure, when the operation was not hurried and when methods for overcoming shock were carried out, was not very great.

DR. ABBOTT thought the members, living in New York and seeing operations performed constantly, were perhaps more strongly opposed to tapping from theoretical considerations than they should be. When one considered the hundreds of cases throughout New England, the Middle, Southern, and Western States, indeed throughout the whole country, which were constantly being tapped by physicians and surgeons in general practice, the probabilities were that there was a larger percentage of cases submitted to tapping than to laparotomy. But he did not recommend tapping, or even aspirating, in the average case of ovarian cyst. Take Dr. Bullard's case, for instance, in which the photograph showed a good face and good bodily condition, in which the pulse was also good; he did not think that patient should have been subjected to the double operation, as she was not. Yet he would have followed Dr. Tuttle's advice to withdraw the fluid during the operation slowly. But in other cases of the kind described in the paper there was necessity for removing the fluid very slowly, and of allowing the circulation to become re-established before proceeding with the major operation. With regard to the danger of local peritonitis, there would hardly be time for peritonitis to set in before the secondary operation was performed. Let the tapping be done one day and the tumor removed the next. The fear had been expressed that the patient would not submit to the major operation after the tapping, but it was in cases in which the doctor had not full control that he suggested this procedure.

DR. HANKS remarked that Keith appreciated the danger of operating rapidly and removing the fluid from immense tumors suddenly, for it was his custom in such cases to cut down to the tumor, insert a small needle or middle-sized trocar, and slowly withdraw the fluid.

DR. ABBOTT understood Dr. Dudley to make a suggestion which he himself believed worthy of thoughtful consideration, namely, that the surgeon, rather than go out in the country and operate on these cases and leave the after-treatment to the family physician, might better tell the family physician to aspirate her first, and after the wound had healed, and the patient had been placed in a condition by the tapping in which she could stand the journey to the city, remove the tumor in a hospital or where the surgeon could have entire control.

Stated Meeting, December 17th, 1889.

The President, J. E. JANVRIN, M.D., in the Chair.

LAPARATOMY AND SUPRAVAGINAL AMPUTATION OF THE UTERUS FOR RUPTURE DURING PARTURITION; RECOVERY.

DR. H. C. COE presented the patient, whose history had already been published in detail (*New York Medical Record*, November 2d, 1889). The operation (which was the first successful one in this country) was performed September 8th, and the patient was now in perfect health, was entirely free

from pain, and was able to attend to all her household duties. She had a small cervico-vesico-vaginal fistula, which caused her some inconvenience, although there were days when she had almost perfect retention. It was Dr. Coe's intention to close the fistula subsequently, although it was high up and would be hard to reach. It was remarkable that the patient should be absolutely free from pain, considering the nature of the operation and the amount of sloughing, in view of the fact that few women, even after the simplest laparotomy, could boast of this immunity. Dr. Coe also presented the uterus and adnexa which he had removed from this patient, calling especial attention to the location and extent of the laceration, and to the fact that its edges were so contused that it would have been inadvisable to suture them. The tear began at the cervix, and extended upward through the left broad ligament into the body of the uterus, being of sufficient length to permit the fifteen-pound child to be extracted through it without enlarging it. The cervix sloughed out entire, with the exception of the portio vaginalis; the wound (eight inches in length) had healed perfectly.

DIFFUSE PAPILLARY ADENOMA OF THE CORPUS UTERI; VAGINAL EXTIRPATION OF THE UTERUS; RECOVERY.

DR. H. C. COE presented a specimen with the following history: Mrs. McC., a widow, æt. 63, was admitted to my service in the New York Cancer Hospital (through the kindness of Dr. Kimball, house surgeon to the Woman's Hospital, who referred her to me) December 2d, 1889. She was the mother of seven children, reached the menopause at the age of 44, and enjoyed good health thereafter until May of the present year, when she had a profuse hemorrhage. Though not very intelligent, she recalled the fact that she had had occasional slight sanguineous discharges at irregular intervals previous to this time. Since May the hemorrhages had recurred frequently. On admission she complained of moderate pain in the back and abdomen. On December 11th the cervical canal was dilated with tents, and the interior of the uterus, which was three and one-half inches in depth, was explored with the finger. A distinct papillary growth was felt in the posterior wall of the corpus uteri near the fundus. A piece of this growth was removed with the sharp curette, and was examined microscopically by me, showing the typical structure of adenoma. On December 16th vaginal hysterectomy was performed, the operation being completed in forty-five minutes. Six pairs of compression forceps were applied, four pairs being removed at the end of forty, and the remaining forceps at the end of forty-eight hours. The tubes and ovaries were removed. The patient did not lose more than an ounce or two of blood, reacted well from the operation, and promised a smooth recovery, in spite of the fact that her urine contained albumin and casts. On the fourth day, however, her pulse became rapid and feeble, and, without presenting any evidences of sepsis or peritonitis, her condition was evidently alarming. Her urine became scanty, her tongue red and dry; she could retain nothing on her stomach, and was partly delirious. During the night she became wildly delirious, jumped out of bed and walked around the ward, in consequence of which her temperature rose to 102°, her pulse ranging from 120 to 130. A careful review of the case convinced me that the patient was an alcoholic; stimulants were

increased per os and rectum, with the result that in a few days all bad symptoms had disappeared. From the second week her recovery was rapid, so that she was ready to leave her bed at the expiration of the third week.

The interesting features in the case were, first, the clinical fact that uterine hemorrhage began nineteen years after the cessation of the menses—an almost certain sign of the presence of malignant disease; secondly, the confirmation of the probable diagnosis by the dilatation of the uterus and the removal of a portion of the growth for microscopical examination. The growth was in itself of considerable interest, since it presented microscopically the structure of adenoma, while clinically it was unquestionably malignant. In looking at the specimen it would be seen that besides the larger growth there were a number of smaller papillary masses scattered over the posterior uterine wall, so that the term diffuse adenoma seemed justifiable. A section through the large growth showed that it had involved the muscular layer, and would in time have perforated the uterine wall. Schroeder had described this condition under the appropriate name "malignant adenoma." It was less likely to ulcerate than epithelioma, hence it was not likely to give rise to a characteristic offensive discharge. It should be added that the tubes and ovaries were removed, although they were evidently atrophied, not to prevent possible functional disturbances (since the menopause had long since been passed), but in order to avoid the possible danger that they might contain the germs of disease. It was especially important to remove the adnexa in cases of malignant disease of the fundal endometrium, since we could never tell when it extended to the mucosa of the tubes.

DR. TUTTLE inquired of Dr. Coe whether he based his diagnosis in the second case entirely upon the physical examination made by the finger.

DR. COE replied that he had had strong reason to suspect the existence of malignant disease from the fact that the woman was sixty-two years old, had passed the menopause many years before, and that during the last two or three years she had had irregular discharges of blood accompanied by shooting pains. Still, her general health was so good that he did not feel at all positive of the diagnosis until he had introduced his finger. It was finally confirmed by microscopical examination of the growth which was felt.

DR. BOLDT objected to the use of the term utero-sacral ligament, employed by Dr. Coe, for there was no ligament connecting the uterus with the sacrum.

DR. COE accepted the correction.

DR. BOLDT went on to say that removal of the tubes and ovaries with the uterus was not only proper in this case, but was always proper in cancer of the body of the uterus.

DR. MALCOLM McLEAN presented a paper on

EXTRA-UTERINE PREGNANCY OF TWELVE MONTHS' DURATION; LAPARATOMY.¹

DR. H. T. HANKS remarked that there was one point of especial interest in the case, namely, that apparently there was a tubal pregnancy which went on to term and three months beyond without rupture. If this were the case, it must be very unusual.

DR. McLEAN.—I suppose that I ought to state that it is my firm belief the fetus was contained in the right Fallopian tube. Unfortunately, the adhesions were such that the only part which I was able to follow on the outside

¹ See original article, page 348.

of the sac was that which led down to the uterus, with which it was distinctly connected on the right side by a thick ligamentous band. I did not find, as might have been expected, a uterus bicornis. The woman had borne a child two years previously. I had examined the uterus very carefully before the operation, found it movable, and after dilatation felt the whole uterine canal. After the operation I felt the inside of the sac and found it quite smooth and blind, although I do not suppose that is necessarily proof of its not being a part of a uterus bicornis. The uterus is even to-day very distinctly separate from the sac. One can take the uterus in his fingers under the abdominal wall. I was satisfied that the fetus was contained in the Fallopian tube, which was greatly thickened anteriorly, while posteriorly it was as thin as the sac of an ovarian cyst. There was no hemorrhage whatever from the surface after the placenta had been stripped off by the fingers. I tried to use the curette, but found it did not do as well as my fingers in removing the pieces from the internal surface of the sac. An interesting point was the absolute death of the placenta. I had been unable to find anything in the journals, or in conversation with my colleagues, which gave me any encouragement to go through the placenta. In Hart and Barbour's book was recorded a case in which, thirteen weeks after death of the child, the edge of the placenta was cut through of necessity, and the patient died of hemorrhage. The placenta was not dead, although the child had ceased to live thirteen weeks before. In this case, however, when I plunged the knife through the placenta I was gratified to see no severe hemorrhage. That being the case, I took out the child, tore the placenta off at once, and left the sac collapsed and stitched into the abdominal wound around the glass drainage tube.

DR. COE thought this was a remarkable case, if it were one of tubal pregnancy which went to the ninth month without rupture.

DR. McLEAN said he could find no indications of rupture, although there was a history of symptoms of collapse at the third month.

DR. COE said that he would not expect the tube to go on dilating after rupture had occurred. He remembered a specimen once presented by Dr. Hanks which was originally a tubal pregnancy; it afterward became abdominal, but in that case the tube did not go on enlarging. When it had reached the size of the dilated tube at the third month, it remained stationary. The child was surrounded by adhesions.

DR. G. M. TUTTLE said the case was not quite clear in his mind. Perhaps he had failed to comprehend some of the points in the description. It seemed the ectopic sac must have been adherent to the abdominal wall. He did not understand Dr. McLean that he had gone on all sides of the sac, but that the ectopic sac was adherent to the abdominal wall anteriorly, and he went directly into the placenta and not through the peritoneum. If such were the facts, he could not understand how the relations of the uterus could be correctly defined. If the case were really one of tubal pregnancy throughout, it was unique. He should suppose, however, that the case was one of primary tubal pregnancy which ruptured and afterward followed the usual course of such cases pointed out by Mr. Tait. He could not understand how the relations could be definitely shown, unless the operator had complete control of the sac. It seemed that he had simply opened into the extraperitoneal ectopic sac.

DR. J. R. GOFFE, having seen the latter part of the operation, wished to state that he had observed where the operator had dissected off the sac a distance of two or three inches about the incision around the abdominal opening, meeting very firm adhesions on all sides except at a point leading down toward the uterus, where it seemed quite free. How far he had passed his hands down in that direction he was unable to say, having arrived only when he was about to close the opening in the sac. But the sac thickened very rapidly down toward the uterus. In thinking the case over afterward, Dr. Goffe came to the conclusion that it was impossible, from anything which he had seen, to state positively just what the adventitious sac was. The tissue where the incision was made looked as though it might be the thin wall of one horn of the uterus.

DR. McLEAN wished to correct some errors which Dr. Tuttle had fallen into. He did cut directly through the parietal peritoneum down upon the tumor, just as one would do if he were cutting into an ovarian cyst. He had been fortunate enough to miss adhesions at the point where he struck the peritoneum covering the sac. But a few inches around this point the adhesions were dense and could not be broken down. The tumor, however, was distinctly intraperitoneal, and the covering was glistening and clean where not adherent to the abdominal walls. The only question in the case at all was whether the sac was the tube or a uterus or some part of a uterus. He was positive, however, that it was not a part of the normal uterus; for this he had carefully examined per vaginam and by bimanual palpation, and had been able to trace the connection of the left tube and ovary to it. Not having been able to get all around the sac, he hesitated to express a positive opinion of its nature, but he certainly believed it to be the tube. That it had a distinct peritoneal covering was a certainty, for he had had his hand all round one side of it, and passed it down to the uterus, where he felt its connection with that organ. Replying to a question by Dr. Tuttle, he said he placed a large drainage tube into the wound, leading down to the bottom of the sac, which he washed out with creolin three times in the twenty-four hours.

DR. TUTTLE did not yet feel fully satisfied that Dr. McLean had passed through the peritoneum on entering the sac; or, if he did, and afterward surrounded the sac, or a portion of it, with his hand inside the peritoneum, there was yet a portion shut off by adhesions. He had not understood what had been done with the opening into the sac—whether it had been sewed to the parietal peritoneum or abdominal wall.

DR. McLEAN replied that he attached the sac to the abdominal parietal peritoneum with great care, so that the peritoneal cavity was properly closed, the drainage tube filling the opening in the sac, which had been diminished by sutures above and below the tube.

ADENO-SARCOMA OF THE UTERUS.

DR. BACHE McE. EMMET presented a uterus removed for adeno-sarcoma. It was of interest chiefly because of the rarity of the affection; yet this was the second one presented this evening, the other having been shown by Dr. Coe. In his own specimen the disease was less extensive. The case emphasized the importance of making microscopic examination of scrapings wherever there were suspicious circumstances. The patient had been losing flesh rapidly. The microscopical examination pointed to adenoma, and he decided to remove the uterus, which was done three weeks ago. The patient was now in a condition to get up.

Dr. Emmet also showed micro-photographs of another case of malignant disease of the uterus, the malignancy being of an undoubted nature. The patient had remained well since the operation, which was performed in the spring.

DR. COE thought that it was rather remarkable to have two specimens of this disease presented the same evening, for they were quite rare. He had presented two other specimens of malignant disease of the corpus uteri at the Society, and then stated that this portion of the organ was primarily affected in less than two per cent of the entire number of cases. Others of large experience had stated that this form of disease was equally rare.

With regard to the examination of the scrapings of the uterine mucosa, it was a subject which had interested him for several years. During the past five years especially, many scrapings had been sent to him for examination in which he had felt doubtful about the diagnosis. He had presented a uterus to the Society in the spring, scrapings from which he had examined three times without being able to make a positive diagnosis, although

his belief was that the condition was malignant disease of the corporeal endometrium. He performed vaginal extirpation, and on opening the uterus found diffuse epithelioma; yet the next day Dr. Freeborn, whose skill as a pathologist was beyond question, reported that the microscopical examination of the scrapings sent him revealed only granulation tissue. It showed that the pathologist did not always get a fair specimen for examination; the scrapings sent to him often included only the superficial or ulcerating portion of a growth, and did not contain cancer cells, which might be present deeper in the tissues. Dr. Coe had at the present time a case under examination in which scrapings had been examined several times, yet no typical signs of cancer could be found, although the symptoms pointed decidedly in that direction.

Dr. EMMET read the pathological report made on the specimen presented by Dr. Freeborn. He thought that, although the diagnosis was doubtful so far as could be determined by the microscope, yet if the patient was losing flesh and showed sepsis, or had hemorrhage, hysterectomy should be performed, for this operation at present was attended by comparatively little danger.

A SURGICAL PUMP.

Dr. CLEMENT CLEVELAND introduced Dr. CARROLL, who demonstrated the working of a surgical pump somewhat like the one on the market called Allen's. To it had been added another tube for use in laparotomy cases. The water entered the abdomen through one tube and made its exit through another during continuous crank motion in one direction. In this way the contents of the abdominal cavity were not permitted to overflow and the patient was kept dry. Where but one tube was employed, and the crank motion had to be reversed to empty the abdomen, there was loss of time. This instrument had been in use prior to 1865, and consequently there could be no infringement of patents.

Dr. HANKS said it was supposed that when the instrument with the single tube was used, the tube was always thoroughly cleansed after giving exit to the fluid and before being employed for irrigating purposes in another case. This, however, might be overlooked, and it would be an advantage to have a double tube, as in the instrument now presented—one for introducing the clear fluid and the other for its exit. He had had a tip placed over the end of the one employed by him, with side perforations, to prevent occlusion by the omentum, etc.

Dr. A. H. BUCKMASTER then read the paper of the evening:

THE TREATMENT OF EXTRA-UTERINE PREGNANCY BY ELECTRICITY.¹

Dr. COE thought that one point referred to in the paper was of special importance, namely, the question of diagnosis. He did not think that we had yet reached that degree of skill in the diagnosis of pathological conditions in the pelvis to enable us *in every case* to recognize extra-uterine pregnancy. He thought it probable that almost every gentleman present who had done much work in abdominal surgery had opened the abdomen and found extra-uterine pregnancy where it was supposed some other condition was present. He thought it might well be questioned whether every one of the thirty-eight cases referred to in the paper as cases of extra-uterine pregnancy were such in fact, since the abdomen had not been opened. Then, with regard to the after-history, it was true that in some instances the sac had entirely disappeared; but this did not always occur. That it might subsequently cause trouble was clearly shown in a case which he had reported some time before, in which a lady, forty years of age, had been married nineteen years, and had never missed a menstrual period until she developed a local peritonitis with previous suppression of

¹ See original article, page 337.

the menses, from wetting her feet during menstruation. She had been sick for several months when Dr. Coe saw her in consultation, and afterward, at the request of her attendant, took charge of her. She had developed what was supposed to be an ordinary pelvic abscess. The abscess discharged into the vagina, and fetal bones escaped, proving the existence of extra-uterine pregnancy, which had not before been suspected. It was impossible to state how long the fetus had remained encapsulated, perhaps for years, but it had eventually proved to be a dangerous nidus for suppuration. It showed very clearly to his mind one of the dangers of leaving the remains of an ectopic gestation in the peritoneal cavity. His patient remained very ill for a long time, but finally recovered.

He did not think the danger of hemorrhage was the only one, nor that the immediate dangers were the most important. Regarding laparotomy, he said he thought he was as conservative as any gynecologist, yet he must say that if it were brought to the crucial test, and he had to select between laparotomy and the use of electricity in the case of a member of his own family where the diagnosis was positive, he would prefer to place her in the hands of a laparotomist in whom he had confidence, rather than to have the awful dread of internal hemorrhage constantly hanging over him. Moreover, he would feel easier to have the fetus removed than he would if he thought that it had possibly been killed by electricity and left to an uncertain fate within the abdominal cavity. In a case of extra-uterine pregnancy at the second month which he had seen in consultation, where the diagnosis was confirmed by Dr. Hunter, the faradic current was used, the sac ruptured, and it was easy to detect gradual increase of the resulting hematocele. Strange to say, the patient recovered without laparotomy or other operation. Yet the case impressed upon him one of the dangers of the use of electricity.

One of the arguments which had been advanced in favor of electricity as opposed to laparotomy was that the performance of the latter required the assistance of a surgeon, while the former agent could be employed with impunity by the general practitioner. Yet the general practitioner might do serious harm by the ill-advised use of too strong currents, as he had shown at a former meeting.

Dr. BACHE McE. EMMET could speak only from a very limited experience, having treated but one case of extra-uterine pregnancy with electricity. Judging from the result of this case and those reported in the medical journals, he would be much more inclined than Dr. Coe to agree with the deductions of the paper. It seemed that out of a large number of cases treated legitimately by this method, not one had given an unfavorable result. His own case, he said, had little bearing upon the discussion. It was one of doubtful diagnosis, he believing it to be a case of ectopic gestation, while Dr. Thomas, who saw the patient in consultation, thought it was a normal pregnancy; but both were of one accord in recommending galvanism, an agent which would simply induce abortion in the one case or accomplish the important result of terminating the extra-uterine pregnancy in the other. It was used, and things came to a standstill, the tumefaction which was felt on one side of the uterus disappeared, and nothing but a small nodule remained. From this limited experience he favored galvanism.

Dr. H. T. HANKS remarked that in deciding upon a course of action in these cases we had to consider whether a given procedure was safe—for instance, whether laparotomy would be comparatively without danger in all hands. We could not always say what was best for a man in Kalamazoo, but for ourselves in New York probably every one present would be prepared to treat any case with the scalpel and hemostatic forceps. He had no doubt that we could remove a tubal pregnancy at the second or third month as safely as we could do almost any operation to-day. But he was just as certain that ninety-five per cent of the physicians of the United States could not do it. There was not a gentleman present who would allow over five per cent of the physicians of America to do an abdominal section on his wife. That, at any rate, was his conviction. In saying this he did not intend to say that the physicians of America were not well educated, but that

they had not had the experience. Admitting this to be true, or even half-way true, what, on the other hand, were the statistics of treatment by electricity? He believed to-day, as he had stated in a paper read at Washington two years ago, that there had not been a single case of destruction of the fetus by electricity the past three or four years in which hemorrhage or other bad result had taken place. The fetus had been destroyed and the patient had recovered. He had attended six cases, in three of which the diagnosis of tubal pregnancy was made before the end of the second month; electricity was used, and the patients were that day well. He had examined two of them within six months past, and there was not a sign of where the tumor had been. He had done three laparatomies for tubal pregnancy, and the patients had recovered. Yet he would allow no gynecologist to do laparotomy on his wife for tubal pregnancy if the fetus had not passed the third month. He felt confident that the fetus could be destroyed by electricity in ninety-nine cases out of a hundred, and the patient suffer no bad results. As to Dr. Janvrin's case, all believed, as Dr. Janvrin did himself, that it was one calling for laparotomy. And in Dr. Buckmaster's case he believed laparotomy could have been done safely. The patient would have gone on, to bleed more, he believed, as long as a mild current was used, but he employed a strong galvanic current and the hemorrhage stopped. If there had been no cataclysmic condition, nothing pointing to hemorrhage, and the case had not passed the third month, he thought it a good course to use electricity, if one were not a good laparatomist. But if the patient desired laparotomy, and one were capable of doing it, he thought it was justifiable. He believed it could be done much easier before rupture than after.

DR. MALCOLM McLEAN thought the term "killing the fetus," which was so commonly employed in discussions on the use of electricity, was an unfortunate one and incorrect. One should say killing or destroying the *ovum*. He believed that the use of electricity before the third month absolutely arrested the growth of the ovum in its entirety. It interfered with nutrition of the sac, and in that way manifested its therapeutic value. He had had two cases, and had seen one in the practice of a neighbor, in which electricity was used and the ovum became so completely absorbed that he was unable to find any traces of it. The testimony of Dr. Thomas and others who had written or spoken on this subject was reliable. If the diagnosis in these cases was not to be believed, he would ask the laparatomists how it was that electricity caused such rapid absorption of tumors of the adnexa of the uterus, or elsewhere in the pelvic cavity. For certainly the tumors attributed in these cases to tubal pregnancy did disappear under the use of electricity. One of the gentlemen present had said that it was very easy to mistake an ovarian cyst for an ectopic gestation. But would electricity cause such rapid absorption of the tumor if it were a cyst? If so, then we should not be doing so many laparatomies. The cases should be treated by electricity. If we were warranted in opening the abdomen for a supposed ectopic gestation before the third month, we would be quite justified in using so simple a thing as electricity. He had not the slightest fear of it before the third month. After that period, however, there might be danger. Whether it was best, after the fourth month, to kill the fetus and operate, or operate at once, or wait until the child became viable, were questions which did not fall under the present discussion. Cases should be properly classified before discussing treatment by electricity. But we should speak of destroying the ovum, not of killing the fetus, as one would speak of killing mice or rabbits.

DR. G. M. TUTTLE said he did not wish to weary the Society with a reiteration of his views on this subject. His position was exactly that which he took when he read a paper before the Society some months ago, describing four cases. He had operated in seven cases, and fortunately all had recovered. But it was not that fact which made him advocate surgical treatment. He believed a victory without an operation was greater than one with an operation. But he did not believe in the theoretical arguments advanced in favor of electricity, and in the statistical arguments he had

even less confidence. A woman had some symptoms of extra-uterine pregnancy—some vomiting, a lump which went on increasing; the family physician called in Dr. So-and-so, who was looked upon as an authority, and who said: "Certainly, doctor, it is a case of extra-uterine pregnancy"; and it was put down as such. With the highest reverence for each and all our teachers, he still thought there was much uncertainty surrounding all these cases. Let the patients be examined separately by a number of physicians, and there would be nearly as many opinions as there were physicians present.

Of course, one had to take into account the experience and skill of the operator, but if he were compelled to choose between treatment by electricity or by laparotomy, in a case of extra-uterine pregnancy in his own family, he would choose the latter. He had been profoundly impressed with the exactness of Mr. Tait's observations regarding the distinction, pathological and clinical, between rupture in the layers of the broad ligament and that into the peritoneal cavity, and a knowledge of the changes which took place under rupture emphasized the importance of operative interference; nor was there much danger in an operation in competent hands.

DR. HANKS wished to add that, since the question of diagnosis was being discussed, he saw no reason why we should not be as positive of the diagnosis of tubal pregnancy as in the diagnosis of a case of pleurisy. But he doubted whether gynecologists were now as capable of recognizing the symptoms of pregnancy as they were ten years ago. He doubted whether many of the men who to-day performed laparatomies could as readily recognize pregnancy as those who were constantly doing obstetrical work. He referred to no one present, but all knew that there were men in America who operated, yet who had not attended many cases of confinement. In the case of extra-uterine pregnancy to which he had referred, several gentlemen were called in and made the diagnosis without knowing what his had been. But it was not so serious an error to diagnose tubal pregnancy and use electricity as to make the same error and do laparotomy. The cases referred to by Dr. Coe and some others did not speak against electricity at all, for they had passed the fourth month.

THE PRESIDENT thought the diagnosis of tubal pregnancy prior to the third month was not quite so difficult as some had supposed. Of course, when he said that, he meant in the hands of those who, like Dr. Hanks, had devoted considerable time to obstetric practice. With attention to the symptoms which he had pointed out in one or two papers already, he believed a good obstetrician and gynecologist could make a pretty accurate diagnosis. The question directly under discussion to-night was whether to use electricity or to perform laparotomy. As for himself, he would certainly choose abdominal section and find out what he had to deal with; and he would feel perfectly justified in this course, for the danger of abdominal section was not very great if done by some one accustomed to it. In expressing this opinion he simply reiterated a statement which he had been accustomed to repeat, when the occasion called for it, for the past three or four years. If a mistake in diagnosis were made—and there was always a possibility of it—he would certainly find some form of tumor in the abdomen which required surgical treatment. There had been some cases in which all the symptoms had not been entirely favorable after killing the fetus, or ovum, by electricity. In several there had been ulceration of the sac, discharge of bones, etc., and a history of long invalidism. He recalled two such cases reported by Dr. Maun, two years ago, in a paper published in the *Annals of Gynecology*, in which he took a stand strongly favorable to electricity.

DR. BUCKMASTER closed the discussion. As Dr. Hanks had said, Dr. Coe's case was one unsuitable for electricity. He was sorry the doctor had been obliged to leave. If one of his ability was not willing to study the subject, and give it careful enough attention to know in what cases the treatment was applicable, it was not to be wondered at that the cases in Kalamazoo were sometimes mistreated. At the same time, the man in

Kalamazoo must be educated in the right way. But he had found the general practitioner a more receptive student of electricity than the laparatomist. That some accidents may have followed this treatment was but natural, yet if an abscess, for instance, did follow electricity an operation could afterward be performed. That laparotomy for extra-uterine pregnancy was not always so simple as had been represented was shown by a case in which he assisted. An extra-uterine fetation was probably present; the tube was quite large; a ureter was seen running through the mass of inflammatory tissue; the intestines were agglutinated to it. Of course it was very easy to say such a mass could have been taken out without any trouble, but Dr. Buckmaster thought the danger too great, and the abdomen was closed. Laparotomy had often been performed for removal of ovaries and the relief of certain symptoms which, after the operation, became worse instead of better, and he felt confident that if the abdomen were opened in thirty-eight cases of extra-uterine pregnancy there would be a greater number with unfavorable results than had taken place in an equal number of cases treated by electricity. It was only last Sunday that he saw a patient who was relieving herself of a ligature which had been placed around a little ovarian tumor two years ago. It was just then coming out through her abdominal walls. She was so thin that she found it uncomfortable to lie down, and had suffered a great deal. There were a good many such cases, results of laparotomy. Many of the cases of abdominal section reported as successful were not mentioned ten days after the operation. In his report the surgeon failed to take into account often the very object for which the operation was performed, and said cured when he meant the patient survived the operation. He thought Dr. McLean's remarks regarding the use of the terms "killing the fetus" and "killing the ovum" were quite appropriate. Dr. Tuttle had had very good results, and all knew that he was an expert operator, but when he doubted the statistics of electricity his position was not tenable. In these cases there had even been ballottement—a sign of pregnancy which could not mislead. There had also repeatedly been discharge of the decidua membrane. If the signs of pregnancy in these cases were worthless, one might as well give up all question of diagnosis of diseases of the chest, of the heart, etc., as the grounds for diagnosis in those departments rested in many instances on no better ground.

Stated Meeting, January 7th, 1890.

The President, J. E. JANVRIN, M.D., in the Chair.

Presentation of Specimens.

DR. W. R. PRYOR presented the uterus and history of a case of

FIBROID OF THE UTERUS TREATED TWO YEARS BY APOSTOLI'S METHOD,
WITH RESULT OF INCREASED HEMORRHAGE; SUBSEQUENT
HYSTERECTOMY.

Mrs. D., æt. 48, U. S., mother of one child æt. 24 years. Always well up to eight years ago, when her periods began to be so profuse that in a short time they amounted to floodings. She consulted a physician, who five and one-half years ago began to treat her by large doses of ergot given by the mouth. These causing vomiting, he gave the ergot hypodermatically. The ergot treatment was kept up for two and one-half years, and was productive of no benefit, merely causing uterine cramps without checking the hemorrhages. About this time the bleedings occurred irregularly, very often, and were severe.

She then went under the care of a physician who is a specialist. He

began Apostoli's treatment in September, 1887. This consisted in the application of one hundred and fifty milliamperes every four days when the patient was not flooding. He made the application by means of a metal sound introduced into the uterus and a sponge above the pubes. The treatment was productive of the most exquisite agony. Under it the hemorrhages became more frequent and severe. Occasionally, especially in July, 1889, large pieces of "tumor," as he termed it, came away from the uterus. During this course of electrolysis several attacks of pelvic inflammation took place. The last séance was in September, 1889, when she gave up all hope of ever being cured. Shortly after this she came to see me. I made my diagnosis of fibroid of the uterus and advised a curetting. She thought she would wait awhile. But one day she sent for me, and I had to check the terrible bleeding from the uterus by means of intra-uterine injections of iodine. A few days after this I sent her to St. Elizabeth's Hospital, where, after dilating the cervix with sponge tents, I was able, under ether, to examine the interior of the uterus. I found the endometrium thickened and softened, the uterus symmetrically enlarged, and the posterior wall a good deal thicker than the rest of the organ. I at once curetted with Sims' instrument, and removed from the fundus large portions of necrotic and sloughy tissue. In addition to this, I scraped out all of the endometrium.

This operation gave the patient a short rest, and me a chance to replace, by nutriment, some of the blood she had lost. But in two weeks she had another attack of bleeding, during which I operated.

I performed hysterectomy December 28th, amputating the uterus at the level of the internal os, and securing the stump by Koeberle's éraseur. My patient is now doing splendidly.

I present this case to you for several reasons.

I think the one hundred and fifty milliamperes at each séance a large quantity to use.

It was productive of the most intense pain.

It did no good; on the contrary, the patient became worse under the treatment.

It produced slough at the top of the fundus, which gave rise to some slight septic manifestations.

The work was done by a careful man, who had just returned from Europe, where he had studied the method of applying electrolysis to these cases. The failure to cure is not due to his lack of skill, but to the method employed in this kind of fibroid enlargement.

DR. H. C. COE had been much interested in the recital of the case, because he had had a somewhat similar one last spring. He was not able to give exact data regarding the electrical treatment, but the patient had been under the care of a good specialist of this city, who had employed the Apostoli method for some months. She had, however, continued to flow profusely, and at each application suffered much pain, and finally refused to continue the treatment. He believed that one electrode was applied within the uterus, the other on the abdomen. The patient then coming under Dr. Coe's care, he removed the ovaries and tubes, and experienced considerable difficulty in doing so. The uterine tumor had since perceptibly diminished in size, although it was not in the first place a large one. The hemorrhages had stopped immediately after the operation. The patient was practically cured, and had returned to her work as housekeeper in a large hotel.

Dr. GRANDIN inquired of Dr. Pryor whether he was certain that the electrical applications in the case had been purely intra-uterine and abdominal, and did not consist at any time in electro-puncture.

Dr. PRYOR replied that he could give only the patient's statement of the case. She was intelligent, and pointed out the only kind of instruments which had been used. They did not include any for electro-puncture.

Dr. GRANDIN said he was pretty familiar with the literature of the electrical treatment of uterine fibroids, and this was, he believed, the first case placed on record in which necrosis of the uterus was said to have followed the abdomino-uterine application of the agent. As far as it went, it afforded a strong argument against a method which, as Dr. Pryor had said, was gaining ground in certain sections of the country. He inquired further of Dr. Pryor and Dr. Coe whether in their cases the positive pole was used within the uterus. These gentlemen having replied that they did not know, Dr. Grandin went on to say that it was claimed for this method that the positive pole rarely failed to check the hemorrhage temporarily, yet in these cases the hemorrhage increased rather than diminished. He had himself never used this method in the treatment of fibroid tumors, but he had employed it, the positive pole within the uterus, in hyperplastic endometritis, with a view of arresting hemorrhage, but had been disappointed in the results. Positive data were desired regarding this method. Most of that yet given may not have been altogether unbiassed.

THE PRESIDENT asked Dr. Pryor why hysterectomy was preferred to Hegar's operation.

Dr. PRYOR replied that he did not think simple removal of the tubes and ovaries would have checked the hemorrhage. The ulcerated condition found in the uterus after its removal confirmed this belief.

Dr. H. C. COE presented a specimen of

MALIGNANT ADENOMA OF THE CORPUS UTERI ; VAGINAL EXTIRPATION OF
THE UTERUS ; RECOVERY,

with the following history : Miss F., *et.* 49, was admitted to my service at the New York Cancer Hospital on December 10th, 1889. She had ceased to menstruate seven years before ; two years later she began to have irregular hemorrhages from the uterus, but no pain until within the past few months. The pains were intermittent, paroxysmal in character, and seemed to radiate from the right iliac region. In March, 1889, she entered St. Michael's Hospital in Newark, N. J., where the uterus was curetted and cauterized for the purpose of checking the hemorrhage, the relief being only temporary. In September, 1889, she entered the Woman's Hospital, where she remained six weeks. She was thoroughly curetted under ether, a quantity of friable material being removed, which was not examined microscopically, although the presence of malignant disease was suspected. The pain and hemorrhage were relieved for a few weeks ; then the pain returned, the patient having attacks daily, lasting from one to four hours. She had no actual hemorrhage, but a more or less constant, slight bloody discharge without odor. Through the courtesy of Dr. Cleveland, under whose care she had been, I was allowed to take charge of the case, which I saw at once would be a puzzling one. The symptoms pointed to malignant disease, but the excellent general condition of the patient, and the absence of most of the pathognomonic symptoms of cancer, rendered the diagnosis doubtful. The vaginal examination threw no light on the case. The uterus was small, movable, and insensitive on deep pressure. On introducing a small, dull wire curette to the fundus, the patient complained of pain and there was a free escape

of bright-red blood. I removed a mass of tissue the size of a small pea, sections of which were carefully examined under the microscope for evidences of malignant disease. The appearances were those ordinarily seen in benignant adenomatous growths, except in one section which contained a few groups of large epithelial cells—in short, the evidence was practically negative. I was, nevertheless, inclined to regard the condition as serious; my colleague, Dr. Kletzsch, always maintained that the patient had either sarcoma or epithelioma of the corporeal endometrium. On December 18th I proceeded to perform vaginal hysterectomy, although in great doubt as to its justifiability. The operation was unusually difficult by reason of the fact that the patient was not only a virgin with a tight hymen, but the vagina had undergone the atrophy which follows the menopause. I was eventually obliged to divide the perineum down to the sphincter, and to carry the incision half-way up the posterior vaginal wall, and even then could not use a small-sized speculum, but was limited to a narrow retractor. The bladder was separated almost entirely with the finger nail; even the index finger could hardly be inserted to a sufficient depth for this purpose. Equal difficulty was experienced in reaching and opening Douglas' pouch. The broad ligaments were secured each with two pairs of Richelot's forceps, and three other pairs were placed on bleeding points, it being impossible to tie a ligature within the narrow vagina. For the same reason it was impossible to draw down and remove the tubes and ovaries. There was considerable hemorrhage, especially venous; the site of the latter could not be discovered. It was controlled temporarily by a tight tampon, but recurred in the night, so that the house surgeon, Dr. Anderson, was obliged to remove the gauze, give an alum injection, and tampon with styptic cotton. The patient's condition in consequence was alarming, but she rallied and after the first week made a good recovery, being ready to sit up at the end of the third week. A rise of temperature on several occasions during the first few days was due to the retention of secretions from the wound, due to the small size of the opening in the vaginal vault. The forceps were removed early (two at the end of twenty-four and the rest at the end of thirty-six hours), as they caused painful pressure upon the bladder and the perineal wound.

On opening the uterus I was much gratified to find on the posterior wall near the fundus a circular, depressed spot, the size of a five-cent piece, with elevated margin, the floor of which was covered with small papillary outgrowths. It had evidently been more prominent, and had been levelled by the curette. Otherwise the uterus presented the ordinary appearances of the atrophied, nulliparous organ. The specimen was submitted to Dr. George C. Freeborn, pathologist to the Cancer Hospital, from whose report I quote the following: "The uterus sent for examination proves to be one of those forms of *papillary adenoma* close on the border line of carcinoma. The new growth is breaking down, and the uterine tissue around it is all infiltrated with small round cells. This is the second case of this form of new growth of the uterus that I have had this season. The first gave a clear clinical history of carcinoma. I made a diagnosis of probable papillary adenoma from an examination of curettings, and on removal of the uterus I was enabled to confirm it. I think that careful examination of cases diagnosed as carcinoma of the body of the uterus will show quite a per-

centage of this form of adenoma. To my mind, they are just as malignant as carcinoma, and give a similar clinical history."

The other specimen to which Dr. Freeborn alludes was presented by Dr. Bache Emmet at the last meeting of the Society, at which time I also showed a similar specimen, removed two days before the operation above described.

This case is of great interest by reason of its obscure character and the absence of definite symptoms. It shows that we are sometimes compelled to base our diagnosis almost entirely upon the clinical history, since neither the physical examination nor the pathologist's report can aid us. Only prolonged and most careful observation of the patient, and the judicious weighing of what little evidence we have thus derived, can justify the surgeon in performing a radical operation. I think that you will admit, after an examination of the specimen, that the limited area of the growth and the absence of evidences of deep infiltration promise a better chance of a permanent cure than we can often hope for after extirpation of the cancerous uterus.

DR. JOHN BYRNE thought Dr. Coe's case one of unusual interest. It showed well the necessity of weighing and thoroughly considering all cases of supposed malignant disease of the uterus. He had a distinct recollection of having met such a case about three years ago. In it, as in Dr. Coe's case, the curette had been used repeatedly. Examination was made of the small particles removed, with negative results. Still the hemorrhages and the more prominent daily recurring pains—attributable, as far as he could see, to nothing else than some malignant disease in the uterus—continued. Unfortunately the patient passed from under his observation, and he was unable to follow up the history. He believed cases like Dr. Coe's were more common than had been supposed, simply because the existence of malignant disease could not be proved without a post-mortem examination. He believed he had himself seen at least one other, but had not had opportunity to verify the diagnosis by autopsy.

THE PRESIDENT inquired of Dr. Coe whether there was much pain in his case.

DR. COE replied that there had been attacks of pain at irregular intervals, limited chiefly to the right side. The pains were not of the lancinating type usually associated with carcinoma, and during the several days she was in the hospital prior to operation she was singularly free from pain.

THE PRESIDENT said the question had been suggested to him by a case at present under observation, that of a lady, about 48 years of age. She came to him about four weeks ago, and on examination he found the uterus somewhat enlarged, the canal about three and one-half inches in depth, filled to a considerable extent with apparently simple granulations, the cervix lacerated. There had been rather profuse menstruation, but no actual hemorrhages. The general health was good, and the patient sought advice simply because of profuse menstruation. He made appropriate intra-uterine applications, advised hot douches, etc., and a week ago thoroughly curetted the uterus and sewed up the lacerated cervix. He found a much larger quantity of granular tissue within the uterus than he had anticipated, and, on submitting it to examination by a pathologist, was informed that the case was one of malignant adenoma of the uterus. This patient had had no pain whatever. She had had simply profuse menstruation the past two years, and had become slightly anemic.

DR. COE asked the President whether he would not regard it as a bad sign if hemorrhage recurred in such a case sooner than usual after curetting for simple granulation material.

THE PRESIDENT said he certainly should think it a bad sign, yet he would be guided very much in his judgment of the malignancy or non-

malignancy of the case by the report of the pathologist who had examined the granulation material.

DR. BYRNE was prompted, by the President's remarks regarding the freedom from pain in his case, to say that formerly it seemed to have been believed by uterine pathologists that pain was almost pathognomonic of intra-uterine cancer. He had himself seen a considerable number, and could safely say that in the vast majority of cases of intra-uterine cancer there was no more pain than in cancer of the cervix. Therefore pain in obscure cases could not be relied upon as a diagnostic symptom at all. He would simply say that intermittent pain, usually nocturnal, accompanied by some other symptoms, would point in the direction of malignant disease, but its absence would prove nothing to the contrary. He thought this view corresponded with the remarks of the President.

THE PRESIDENT said he had also seen other cases of cancer of the body of the uterus in which for a long time there had been no pain whatever. Other symptoms, as hemorrhage, first pointed to the malignant disease. But he had intended to raise the question whether malignant adenomatous disease of the uterus was less likely to produce pain than true carcinoma. He was disposed to think it was.

DR. COE thought an explanation of that was the fact that there was less ulceration attending the cases of adenomatous diseases than was observed to accompany carcinoma.

SILK LIGATURE REMOVED FROM SINUS AFTER LAPARATOMY.

DR. H. T. HANKS presented the specimen. It was obtained from a case in which he had operated for ruptured extra-uterine pregnancy in the Woman's Hospital ten days ago. The right broad ligament, through which the large hematocele had ruptured, was very friable, and the suture had a strong tendency to cut through. A drainage tube was introduced and irrigation performed for a time twice a day. Notwithstanding the patient was in a dying condition before the operation, she made a good recovery. The two sutures presented were removed from a sinus this week.

DR. COE remarked, as bearing on the length of time a silk ligature might remain encysted, that he had made an autopsy on the body of a patient who had been submitted to ovariectomy over a year before, and had found in the cicatrix, at the site of the pedicle, a silk ligature entirely unchanged. In two recent cases of secondary laparotomy, performed respectively eight months and a year after the primary operation, he had been unable to find the old ligatures.

DR. PRYOR recalled two cases of abdominal section in which he some days later removed the ligature through a sinus. He attributed the fact that the ligature did not become encapsulated to leaving the drainage tube in longer than was customary to-day.

DR. BUCKMASTER said Mr. Tait had recently called attention to the fact that the drainage tube frequently caused trouble by resting near the ligature and giving air access to it. It was a fact that even sterilized ligatures which had been soaked in wax would cause suppuration if air were allowed to come in contact with them in the tissues. If air were excluded, suppuration would not take place.

DR. GRANDIN remarked that only a few meetings ago a distinguished member of this Society had stated that silk was less likely to give rise to trouble than silkworm gut, for the reason that the former became absorbed. He had been somewhat interested by that statement, for his own impression was that silk was not absorbed. The testimony to-night was against the view that it became absorbed.

DR. HANKS remarked that several years ago, when certain preparations of silk were imported and used, it was claimed that they were absorbed. For his own part, however, he had not seen any which were absorbed.

DR. PRYOR recalled a case in which, at a second abdominal section five

years after the first, no trace of the silk ligatures used at the first operation was found.

DR. BUCKMASTER thought the ligature might easily be overlooked in its encapsulated state at the second operation.

DR. J. LEE MORRILL presented

A HUMAN OVUM NOT MORE THAN SEVENTEEN OR TWENTY DAYS OLD, and gave the following account of the case. A lady, 39 years of age, was suffering from advanced heart disease, and twice before had been obliged to have miscarriage brought on to save her own life. The first time she went six months and nearly died. The second time miscarriage was brought on by Dr. Schnetter, assisted by Dr. Krug, at the third month. This, the third time, it was not thought advisable to let her go on at all. She had symptoms which led her to think that she was pregnant, and believed conception to have taken place just prior to the preceding menstrual period. Seventeen days from the supposed date of conception, Dr. Morrill decided, after consultation with Dr. Krug, to induce miscarriage. Dilators were used, and, to his surprise, the ovum presented and came away unruptured. The uterus was afterward curetted. The woman made a perfect recovery.

Dr. Morrill had shown the specimen to several persons interested in embryology, and all said that it was the only one of so early a date that they knew of in this country. He had some time before presented an ovum to the Society which was known to be not more than six weeks old, and it was four times as large as this one.

DR. GRANDIN said that if this specimen was not more than seventeen days old, it was, if he remembered correctly, the youngest human ovum on record, not only in this country but also in Europe. It was highly important, therefore, to know its exact age, and he asked Dr. Morrill whether the patient judged by her sensations or by the date of connection.

DR. MORRILL replied that she judged by her sensations. The ovum was evidently not six weeks old, and it would have to be that old if impregnation took place more than twenty days before the miscarriage. As already stated, it could not date six weeks back, for the reason that it was not one-quarter the size of an ovum whose age he was absolutely sure was not greater than six weeks. Dr. Freeborn, who had made a study of embryology, said he had never seen anything approaching this specimen in size.

DR. COE suggested that, since the specimen was so very rare, it would be well to place it in the hands of some embryologist for a detailed report, which should go on permanent record.

DR. MORRILL said the suggestion made by Dr. Coe would be acted upon.

DR. PRYOR exhibited a

Sponge Holder for Abdominal Work.

It is a modification of Hunter's. The latter is excellent, but the catch is



apt to become undone, and in handling a number of them hurriedly they get tangled up. Dr. Pryor made this sponge holder purposely to overcome

these objections. It is made by Hazard, Hazard & Co. It is easily cleansed, catch cannot slip, and it is easy of handling.

DR. MORRILL read a paper on

A CASE OF PREGNANCY COMPLICATED WITH UTERINE FIBROIDS; DEATH FROM RETAINED PLACENTA.

This case is reported for the following reasons:

1. It calls renewed attention to the disastrous results almost sure to follow retention of the after-birth.
2. It illustrates one of the many difficulties which the obstetrician may meet in his attempts at removal of the placenta.
3. It raises the question as to whether, in similar cases, resort to hysterectomy is not advisable as affording the woman the greatest chance of recovery.

The following is the patient's history prior to my seeing her: Mrs. E., æt. 35, married three years. The patient was under the impression that she had twice miscarried at the sixth week, having always menstruated every twenty-one days, with the exception of these occasions of supposed pregnancy. Four years ago she had become aware of the presence of a uterine fibroid, and last January she consulted, among others, Drs. T. A. Emmet and J. B. Hunter, who advised hysterectomy for these tumors. The patient declined an operation, and subsequently, after examination by Dr. J. E. Janvrin, was referred by him last June to Dr. J. H. Gunning for electrical treatment. At this time there appeared to be two tumors, the one on the right the size of a child's head, the other, anteriorly, twice as large as the closed fist. Under electricity the distressing bladder symptoms disappeared and the tumors diminished in size. Electricity was administered until August, when she missed her period and believed herself to be again pregnant. On the 15th of November she began to have bearing-down pains. Dr. Gunning was sent for, and prescribed to avert the impending miscarriage. The pains continued, however, for a week, when the membranes ruptured. That night she had a chill followed by a temperature of 103½° F. I was then called in consultation (November 23d) by Dr. Wooster Beach, but did not obtain the above history until after I had examined her. The patient informed me that she was having expulsive pains at regular intervals, and that she had passed a number of clots, but whether any part of the fetus or placenta had come away she was unable to say. To my surprise I found the uterus enlarged to the size usual at the sixth month of gestation, and upon more careful examination I detected the fibroids. Examining per vaginam, and finding cervix soft and os dilatable, I concluded there would be but little trouble in effecting delivery. Not being able to depress the fundus, owing to the presence of the fibroids, the patient was chloroformed. I then inserted my entire hand into the vagina, passed through the cervix, and above the internal os I found a constriction through which I could only introduce two fingers. This constriction was as hard and unyielding as cartilage. I endeavored then to grasp either the fetus or placenta with a pair of forceps. I managed to extract an arm only, which had been detached before my arrival. The arm was macerated. I became convinced that the woman could not be delivered *per vias naturales*, and

gave it as my opinion that hysterectomy would offer her the best chance for her life. Even though I felt that she was already septic, her condition was such as to lead me to think that she could stand the shock of the major operation. I was informed by Dr. Beach that this proposition would not be entertained. I then suggested that Dr. H. C. Coe be added to the council. After attempting to dilate with Barnes' bags for some hours without effect, Dr. Gunning applied Molesworth's trivalve dilators. These also failed, as did the curette, to accomplish anything. During the night the fetus was spontaneously expelled. The next few days I again attempted at intervals to remove the placenta by means of forceps and curette, but without success. Notwithstanding the constant use of antiseptic vaginal and intra-uterine douches, it was plainly evident that the patient continued to suffer all this time from the effects of putrid infection. Dr. Janvrin next saw the case. He confirmed the diagnosis of septicemia, and urged the importance of further attempts at removal of the after-birth. He also failed in his endeavors. A permanent drainage tube was then inserted, reaching up to the fundus, and the uterine cavity washed out every four hours with a solution of carbolic acid. Two days later she died.

Although I am satisfied that the patient was septic at the time of my first visit, I feel reasonably sure that had hysterectomy been resorted to when first suggested her life would in all probability have been spared. This is the point on which I particularly invite discussion.

DR. J. H. GUNNING, who had seen the case, believed it was from the start one of misfortune due to procrastination. His experience with it occurred two days prior to the time Dr. Morrill saw it. After the patient had suffered a week or ten days with threatened miscarriage, he was called to see her. She had had pains all the previous day and night (Thursday), and when he arrived Friday morning she informed him that the membranes had ruptured and the contents had escaped. He made an examination and found a different state of affairs from any which were present when other gentlemen subsequently examined her. The uterus was low in the pelvis, the cervix was dilated considerably larger than a silver dollar, so that he was able to pass in two fingers, feel the shoulder, and take hold of the arm. He told the patient he thought it best to remove the fetus, but she objected, saying she preferred to wait and let Nature take care of the case. She was sustained in this view by her husband. In the course of the afternoon the arm came down, the child was presenting, and also three or four inches of the cord, which he was able to follow to its attachment to the placenta low down upon the right side. He was also able to get his finger between the uterus and the placenta, and told the patient all that was needed to readily remove it was her consent, but she expressed fear of hemorrhage; and while he assured her that hemorrhage could be controlled, she insisted on the case taking its own course, and consequently it was let alone. Dr. Morrill's account of the case then came in. Dr. Gunning believed that the entire uterine contents were in the lower segment of the uterus at the time he saw the case, and could have been removed; that the placenta afterward slipped into the upper segment above the level of the fibroids, and, because of uterine contraction below, was beyond the reach of the doctors who saw the patient later.

Dr. COE thought that if the fatal result was to be attributed to procrastination it could fairly be dated back prior to the time when Dr. Gunning was called to the case. In other words, pregnancy should not have been allowed to go on. It seemed to him almost incredible that a patient so well acquainted with her case as was this one should have taken the risk of allowing pregnancy to continue. The situation of the tumors was well known, and the result of uninterrupted pregnancy was clearly understood.

Regarding a radical operation, he thought he was as ready to perform one as anybody, but he did not think it justifiable in this instance, since at the time when he was called the temperature was high and the pulse was very rapid and feeble, the patient having been subjected to considerable manipulation. Moreover, the situation of the fibroid tumors, the lower of which was impacted in the pelvis, would have made it exceedingly difficult to lift the mass out and obtain a pedicle.

Aside from these considerations, it was a question whether the patient could not be relieved without so formidable an operation. Considering that a portion of the fetus had already been removed, that one could just feel a portion of the placenta with the finger, there seemed to be no reason why the remainder would not come away, especially as the speaker was able to remove portions of it with forceps. It was easy enough to say what one should have done, at the conclusion of a case, but when it was remembered how formidable an operation was hysterectomy under these circumstances, and that the uterine contents had been successfully discharged under even more unfavorable conditions, he did not know but what he would follow the same course another time, especially when there was so much opposition made to a radical operation.

The case taught one most important lesson, namely, that a woman who had fibroids of the uterus should not marry, and if she should become pregnant it was her duty to consult a physician as soon as possible with regard to the propriety or necessity of having the uterus emptied.

DR. GRANDIN said that, after hearing Dr. Gunning's remarks, one could have no doubt that this patient waited herself into eternity. She thought she knew more than the doctors; she was probably one of the French school, who believed in waiting on Nature. Personally he had always been opposed to waiting on Nature longer than common sense told him was right. Had he been in Dr. Gunning's place, he would have done what had been proposed—empty the uterus at once. When Dr. Morrill saw her she was already septic, constituting a case of autogenetic infection. Regarding the propriety of hysterectomy at a later date than when Dr. Gunning saw her, he differed from Dr. Coe. The patient had been attended by competent physicians, who had done their best to empty the uterus. She had become septic, the septic poisoning was growing deeper, and it was evident that it would lead to her death, and but one thing remained to be done, namely, to perform hysterectomy. Seeing that this operation had been done under far more unfavorable conditions and saved life, it was not unlikely that it would have saved this patient. He understood that attempts at dilatation had been limited to the use of Barnes' bags. That was a mistake. Barnes' bags in his hand had proven utterly worthless. If they had not ruptured, they had not caused dilatation in any case similar to this, in which there was annular constriction above the internal os. He preferred the tupelo tent. Prolonged pressure was essential in order to cause such contractions to yield, and this could be well obtained through this tent.

DR. COE said a powerful steel dilator had been used, but without success.

THE PRESIDENT said he had seen this patient some months before she became pregnant; sent her to Dr. Gunning, who treated the uterine fibroids by electricity; and the next time he saw her was only a day or two before her death. She consulted him at his office in the latter part of March, and he detected two large fibroid tumors of the uterus, one fully as large as a child's head, low down, taking up nearly the entire cervix anteriorly and laterally, and extending up to or beyond the centre of the uterus, there breaking off abruptly, leaving quite a sulcus between it and a fibroid above, in the right horn, which was about twice the size of an orange. She did not state that she had consulted any other physicians. She introduced herself as an M.D., and he simply told her by all means to avoid becoming pregnant, and referred her to Dr. Gunning for treatment by Apostoli's method. As just stated, he did not see her again until about thirty-six hours before her death, and nearly a week after the beginning of abortion. She was then in an extremely septic condition, had a very rapid and weak

pulse, and could not, it seemed to him, live longer than twenty-four hours unless the placenta were removed. It was four days subsequent to expulsion of the fetus. After considerable persuasion they were permitted to place her on the table. At first gave nitrous oxide, then followed with chloroform, and, when fully under it, attempted to remove the placenta. The tumors seemed to have been reduced about one-quarter since his examination in March. After some manipulation, but without using any force, Dr. Janvrin was enabled to pass a flexible catheter through what would ordinarily be called an hour-glass contraction, situated three to four inches above the internal os. The canal was devious, and he was unable to pass an ordinary sound until after he had introduced a soft catheter. Then passing a large dull curette, he curetted as well as he could the upper cavity, and brought away a large number of pieces of excessively fetid, degenerated placental tissue. But it was impossible to remove much. The patient was extremely weak, and, in his opinion, was at that time in bad condition for hysterectomy. After removing as much of the placental tissue as he could with the curette, the largest male catheter which would pass up through the canal was introduced and the cavity thoroughly washed with a solution of carbolic acid. The flexible catheter was left in as a permanent drain and for subsequent irrigation. But the patient died about thirty-six hours later.

DR. HANKS had been much interested in the recital of the case, because it represented a class which we were all liable to be called upon to attend at any time. Too much stress could not be laid upon the point made by Dr. Coe, that in such cases pregnancy should not be allowed to go on. He had gone over the subject about two years ago in a paper, and he was extremely interested to learn in how many cases of fibroid tumors of the uterus miscarriage took place from malnutrition, the fetus being expelled spontaneously or without assistance, while the surgeon in charge had had many doubts about Nature's ability to take care of the case. The portion of the cervix not involved in the tumor did dilate tremendously in some cases, and a fetus of considerable size could be discharged when only a small portion of the cervix remained free. In the case related by Dr. Morrill, there was but one thing to do when it was seen by Dr. Gunning, if the patient had consented, namely, to forcibly dilate with the hand and deliver both fetus and placenta. Very few patients with fibroids could go to term without trouble, and it should not be permitted.

DR. BUCKMASTER asked what antiseptics were used, and Dr. Morrill replied that bichloride of mercury in solution was employed for the hands, carbolic acid solution, about 1 to 40, for the vagina, and a weaker solution for the intra-uterine injections. Dr. Buckmaster went on to say that in his experience with septic uteri pure carbolic acid was an excellent agent to apply to the internal surface. Some time ago he attempted to remove the placental remains from the uterus with the soft curette, but a large mass still remained and he injected pure carbolic acid. No difficulty was caused by it, and in a few days some broken-down material escaped, and the remainder was removed later.

DR. MORRILL inquired whether the placenta in that case was putrid, and, receiving the reply that it was not, he added that he had himself seen a part of the placenta remain three months and cause no trouble, but again he had seen it do a great deal of harm within three days. It made all the difference imaginable if it were putrid.

DR. BUCKMASTER, continuing his remarks, said he had had one case of uterine fibroid, low down, complicated by pregnancy, in which he and the consultants advised Porro's operation; but the woman refused, the pregnancy went on, and she gave birth to a living child. It seemed impossible that the head could pass the tumor, yet it did. In two cases which had come under his observation in which the child was delivered piecemeal, it seemed to him the death of the mother was due to the attempts at delivery rather than prolonged labor. In one case the vagina had become black from instrumental interference. In a case like the one related in the paper, one would not expect such a result—the gentlemen in attendance all being

skilled—yet he believed that in cases like this one even the best men would unconsciously do some injury in attempts at delivery. He must say with Dr. Grandin that if the woman's condition warranted it, hysterectomy should have been performed. Even if the patient were in danger of dying on the table, the risk could not be greater than to leave her without the operation.

THE PRESIDENT said that even at the time when he saw the patient he would not have refused to do hysterectomy, had it been possible to obtain the consent of the patient and her uncle. They would consent to nothing but curetting and washing out the uterus; and that he did as thoroughly as could be done.

DR. GOELET thought it very important not to allow these patients to become pregnant. But in this case, since the woman had become pregnant, it would have been checked had the electrical applications been intra-uterine and sufficiently strong.

DR. GUNNING said intra-uterine applications were not permitted.

DR. COE said, in justifying his advice not to do hysterectomy, that the fetus had subsequently been discharged spontaneously, and there was no reason at the time for supposing that the placenta might not pass in the same way, especially as it had been felt in the lower segment before the fetus was expelled. While he would not shrink from operating in a suitable case, it still seemed to him that hysterectomy was not called for in this instance when he saw the patient. It had been suggested on some other occasions that he was not sufficiently conservative, yet he certainly could not go so far as Dr. Grandin, whose remarks seemed to imply that the uterus was to be removed for the cure of septic endometritis due to retained placenta.

DR. GRANDIN thought that there was no analogy between hysterectomy for this case and hysterectomy recommended for septic endometritis in general. Here was a case in which the uterus was the seat of two large fibroid tumors. It contained a placenta which several expert physicians were unable to remove, and which had already caused septic poisoning. Given such circumstances, he would not wait, allowing septic absorption to go on, but would do hysterectomy at once. There was a vast difference between recommending hysterectomy for septic endometritis and for the latter complicated by putrid placenta which could not be removed. He would be the first to condemn the former.

Reference having again been made to the use of the tupelo tent in preference to Barnes' dilators, Dr. Morrill stated that, after the latter had been used and failed, a steel dilator which was powerful enough to rupture any cervix, and certainly more powerful than any tupelo tent, was repeatedly tried, yet it made no impression in this case. He believed the hour-glass contraction of the uterus took place even before the expulsion of the fetus, for this was compressed and had the form of the canal through which it passed. It was the only case in which he had ever failed to enter the puerperal uterus to empty it of its contents. With regard to the radical operation, he could see no reasonable objection to it in this case, although he did not advocate it in septic endometritis in general. Dr. Emmet and Dr. Hunter had both advised hysterectomy a few months before, and if they, conservative men as they were, thought it proper when there was nothing present to do immediate harm, he thought it certainly justifiable and advisable when added to the former condition was a retained putrid placenta which it was not possible to otherwise remove. It was not possible to dilate the canal.

DR. PLYOR said he approved of hysterectomy in this case. It not being possible to remove the placenta one way, it should have been removed the only remaining way.

DR. EGBERT H. GRANDIN reported a case of

ICTERUS GRAVIDARUM.

Jaundice of pregnancy, in its so-called grave or malignant form, is of uncommon enough occurrence to warrant my reporting the only case which

has come under my observation in a somewhat active obstetric practice. It is very exceptional that malignant jaundice does not determine the premature expulsion and death of the fetus, and in the vast majority of cases the disease has also proved fatal to the mother. This disease, therefore, is of more than ordinary interest, the etiology being usually obscure and our therapeutic resources proving generally without avail against what would seem to be the almost uniform sequelæ.

Standard writers on obstetrics describe two forms of jaundice occurring during pregnancy: the simple catarrhal icterus, benign in its effects and transient in nature; *icterus gravis*, associated with acute yellow atrophy of the liver, which, as a rule, ends in premature interruption of gestation and in death of the fetus and of the mother. Intermediate between these two forms there occurs a form of jaundice which differs from the malignant variety only in that the liver, instead of being atrophied, is hypertrophied—that is to say, where the condition of this organ is similar to what, aside from gestation, is known as hypertrophic cirrhosis. In this category ranks the case which I proceed to report, and for the careful notes of which I am indebted to my house surgeon at the Maternity Hospital, Dr. E. W. Bulkley.

Bertha F., age 35, married, a native of Belgium, was admitted to the Maternity Hospital August 24th, 1889. Her family history was good, and she herself gave no history of venereal disease, rheumatism, or alcoholism. This was her fourth pregnancy, and nothing of special interest had complicated any of them. The patient was poorly nourished and anemic. She complained of attacks of severe headache and of chills followed by fever and sweating. She was ordered Warburg's tincture and Bland's pill. Physical examination revealed the lungs sound, the liver not enlarged, the kidneys in good order, the spleen slightly enlarged, the pelvic diameters of the average size, and gestation advanced to about the sixth month, the fetal heart being heard three inches below and one-half an inch to the right of the umbilicus. On August 31st the patient complained of pain in the back, and thought she was in labor; but although the pains continued throughout the day, they had no effect on the cervix. On September 1st the patient began to vomit, and this continued intermittently for twenty-four hours, when she became drowsy and the skin was slightly jaundiced. On September 4th the patient was much weaker and very despondent, the jaundice was marked, the sclerotic yellow, the fetal heart could not be heard, and fetal movements had ceased. September 5th the pulse was 122, the temperature 101° F., respiration 26, the liver enlarged, projecting one inch below the free border of the ribs. The urine was acid, specific gravity 1.010, contained a trace of albumin, and by Gmelin's test the presence of biliary salts in small amount was determined. On September 6th, in the morning, labor set in, and after the lapse of two hours the patient was delivered of a dead, jaundiced fetus. The liquor amnii was deep yellow in color: there was no hemorrhage, either before or after the expression of the placenta, and the lochia did not appear for six hours after delivery. At 12:05 P.M. (September 6th) the pulse was 110, respiration 32, temperature 101° F. The patient vomited bile, was very restless during the day, towards evening became delirious, and died at 1 A.M. September 7th. Owing to the neglect of the curator on duty, no autopsy could be obtained.

The history of this case does not assist us, any more than that of other reported cases, in explaining the fatality of jaundice occurring in pregnancy. Why an affection ordinarily benign should assume such malignancy when associated with gravidity is a question as yet unanswered. The death of the fetus finds a rational explanation in the statement that a feeble and imperfectly developed organism is readily poisoned by the toxic material circulating in the maternal blood from which the fetus obtains its sustenance. The same explanation, however, will not hold for the mother, for it is very exceptional that, when not complicating pregnancy, icterus, whether simple catarrhal or associated with yellow atrophy of the liver, leads so speedily to a fatal issue. Neither, in my case, is the etiology of the affection any more evident than in similar reported cases. Of the numerous so-called etiological factors of icterus—biliary calculus, gastro-duodenitis, malignant growths of the liver—these were absent in the case of my patient. In how far the fatal issue may be ascribed to the fact that the patient's system was undermined by paludal poison, and that the effects of this, superadded to those ordinarily associated with icterus, were more than the system would bear, I will not attempt to theorize. The chief point evidenced by the case, and the one which I desire to lay stress upon, is that icterus gravidarum is one of the diseases complicating pregnancy in the presence of which our therapeutic resources appear to be utterly unavailing, certainly in the vast proportion of cases. When the disease develops, the induction of abortion will not arrest its course. The advent of the affection is very insidious, and I question if, long before the propriety of emptying the uterus suggests itself, the maternal system be not already poisoned. An almost constant accompaniment of the disease is miscarriage, and the fetus is usually still-born. A study of reported cases proves amply that to anticipate what as a rule occurs, neither assists the mother nor enhances the chances of viability of the child. In regard to drugs, we may ring the changes on those which naturally suggest themselves, but if the icterus be due to something more than a simple gastro-duodenitis, in the majority of instances its progress is towards coma and death. To state this question in the strongest possible light, I have found, after considerable research, that the maternal mortality of icterus gravidarum is about fifty per cent. Nowadays even puerperal septicemia, when rightly treated from the onset, is not accompanied by such a high mortality percentage.

Stated Meeting, January 21st, 1890.

The President, J. E. JANVRIN, M.D., in the Chair.

FIBROMA OF THE OVARY COMPLICATED WITH ASCITES; LAPARATOMY;
RECOVERY.

DR. H. C. COE presented a specimen of the ovary, removed by Dr. G. A. Kletzsch, and gave the following history of the case: Miss P., *et.* 42, was admitted to the service of the late Dr. Hunter in the New York Cancer Hospital on June 27th, 1888. She stated that her menstruation had ceased seven years before. Her abdomen had gradually enlarged. At her entrance it was considerably distended with ascitic fluid, so that her respiration was impeded and the superficial veins were prominent. The patient's general

condition was very poor. On July 4th, during my absence from the city, Dr. Hunter made an explorative incision, evacuated a large quantity of ascitic fluid, and discovered a small, hard tumor which he supposed to be of uterine origin and firmly adherent to the surrounding parts. As supravaginal amputation of the uterus seemed to be the only operation indicated, and there was a strong suspicion that the growth was malignant, it was decided not to proceed further. The abdomen was closed, the patient made a good recovery and was discharged, at her own request, August 2d. Two months later she again applied for admission, complaining of severe pain in the lower part of the abdomen, which again filled with fluid. She was tapped once during the following winter to relieve dyspnea, and again on June 1st, 1889, nearly four gallons being removed on the latter occasion. A careful bimanual examination (the first that I had had an opportunity of making) revealed a large, hard mass apparently attached to left side of the uterus and immovable. I discussed the advisability of again attempting its removal, but the feeble, cachectic condition of the patient, and the rapid re-accumulation of ascitic fluid after tapping, led me to believe that the mass was undoubtedly malignant and that operative interference was not justifiable under the circumstances. I examined the ascitic fluid for "grouped cells," but could never find them.

The fluid accumulated so rapidly after the last tapping that it was necessary to withdraw three gallons more a month later. The patient now began to improve so much that Dr. Kletzsch, my assistant surgeon, believed that an operation could be safely undertaken. Accordingly on August 26th he operated successfully, removing the present specimen, which appeared as a hard, globular, sessile tumor, six inches in diameter, that was attached to the side of the uterus and had grown between the folds of the broad ligament, so that at first it was supposed to be a subperitoneal uterine fibroid. On lifting it out of the pelvis, it was found to be of undoubted ovarian origin. A careful examination, made by the pathologist, Dr. Freeborn, confirmed the opinion that it was a true fibrous tumor of the ovary. The patient's recovery was complicated by the formation of a pelvic abscess. She was discharged well, and remains in perfect health after the lapse of five months.

Dr. Coe added that a review of this case raised several interesting questions regarding which there is considerable difference of opinion among the best authorities, viz., the frequency of true ovarian fibromata, the pathological changes to which they give rise, and the differential diagnosis between these and malignant tumors of the ovary. Dr. S. W. Howell has presented the most recent and complete résumé of our present knowledge with regard to solid neoplasms of the ovary, in his monograph in the "American System of Gynecology." He calls attention to the fact that fibromata of the ovary are by no means so rare as might be inferred from a review of the literature. Dr. Coe said that he could attest the truth of this statement from personal experience. Several undoubted specimens have been presented to the Society, as will be evident from a review of the Transactions, and hardly a month passes in which a well-authenticated case is not reported, either in this country or abroad. In the face of this positive evidence, it is difficult to understand how such experienced gynecologists as Winckel and Olshausen should refer to ovarian fibromata as being

"very rare," or that Tait on the one hand and Doran on the other, who have had unequalled opportunities for studying ovarian tumors, should state that they have never seen a specimen. Prominent American writers exhibit equal scepticism with regard to the genuineness of the cases reported. Doubtless this arises from the prevailing opinion that most of the tumors exhibited as solid ovarian growths are really pedunculated, subserous uterine fibromata that have grown in between the folds of the broad ligament and have subsequently become detached. But it is impossible to see how both operator and pathologist can be deceived in this respect, since in the eight or ten specimens examined by me the relations of the tube, ovarian ligament, and meso-salpinx were precisely the same as in the case of an ordinary cystoma.

There is no earthly reason why fibromata should not develop from an organ so rich in fibrous tissue as the ovary, just as well as from the uterus. It is the exception to meet with sessile growths of this character.

We often fall into the error of associating ascites almost exclusively with cancerous tumors, as I did in the case reported, when we have the weighty authority of Olshausen to the effect that ascites is a frequent complication of solid benignant growths of the ovary, even when the tumor is of small size. The cause of this effusion has never been discovered, although it is certain that it is due to the presence of the tumor, since it is entirely cured when the latter is removed. In the case of cancer of the ovary, we commonly find secondary nodules on the peritoneum, which cause irritation of that membrane and consequent effusion of serous fluid; but in the case of small ovarian fibromata there must be some local venous obstruction causing general stasis in the abdominal system.

I can more readily understand how an adherent growth could produce ascites than a small, non-adherent tumor such as we most frequently meet with. But adhesions are rare, since these tumors grow slowly, are non-irritating, and consequently seldom give rise even to localized peritonitis.

This case is most interesting from the standpoint of diagnosis. It is certain that few ovarian fibromata have been diagnosticated before operation. In the present instance, even an explorative incision by an experienced laparatomist only strengthened the suspicion that the patient was suffering from malignant disease of the pelvic organs. The general condition of the patient, the severe pains, and the rapidity with which the ascites recurred after tapping—all seemed to favor the diagnosis of cancer. As a point of some interest, it should be stated that I frequently examined the ascitic fluid for the "grouped cells" of Foulis and Thornton—which I have rarely failed to find in cancerous ascites—and could never discover any. I entirely disagree with Mr. Tait that these cells are absolutely without value from a diagnostic standpoint, since I have frequently been able to prove the contrary, both at the operating table and in the dead-house.

In connection with the discussion of this case, I would like to elicit from the Fellows an expression of their opinion with regard to the absorption or disappearance of intra-abdominal tumors after explorative incision, as recently claimed by the distinguished laparatomist before mentioned. It is difficult to accept such a remarkable statement, at least with regard to intrapelvic growths like the one described. Dr. Kletzsch deserves great credit for his successful operation upon a patient who had been under careful obser-

vation for over a year and had been pronounced incurable by an experienced laparatomist, who had previously made an explorative incision.

Dr. Coe invited, in connection with his case, discussion on certain statements recently made by Mr. Tait on the results of exploratory laparotomy, to the effect that merely opening the abdominal cavity had in some of his cases caused the disappearance of tumors. There had certainly been no change in the tumor in this case subsequent to the first laparotomy, and the reporter could add that he had never before heard of a uterine fibroid being absorbed in this way. This was even more surprising than the results obtained by the use of electricity. Regarding exploratory incision in cases of malignant disease of the pelvic organs, omentum, or peritoneum, he would say that he had rarely seen any other result except a more rapid termination of the case than would have occurred if the patient had been let alone.

Dr. W. M. POLK said his observation coincided with that of Dr. Coe entirely. He had performed exploratory laparotomy for carcinoma, and must confess that he had not had that freedom from ill results which one might expect when he did no more than introduce a finger to make the diagnosis clear. He would prefer to hear something further from Mr. Tait concerning his discovery—for it was a discovery—before passing judgment upon it. It was so at variance with experience in this country, and apparently with experience in other countries, that he felt, in spite of a profound respect for Mr. Tait's work, staggered on reading this article. He agreed with Dr. Coe with regard to the frequency of fibroma of the ovary, and thought the records of the Society would corroborate his views. He had himself presented three or four specimens of this nature the past five years.

Dr. A. P. DUDLEY said he had already expressed his opinion of Mr. Tait's paper. He could not but think there was something wrong about it, for the laparotomies which he had seen for cancer within the abdomen had almost invariably resulted disastrously—due either to inflammatory conditions immediately following the operation, or to rupture through the scar from pressure of the accumulated fluids in the cavity. He was, therefore, inclined to believe with Dr. Polk that we needed more evidence. He was ready to believe anything which seemed reasonable, but he could not believe that merely opening the abdomen and introducing the finger would cause the disappearance of a malignant tumor, or even of a fibroid or cyst. He did believe, however, that it was possible for the operator to think there was a tumor when there was none. He thought Dr. Kletzsch deserved much credit for the success of the operation, performed under the difficulties which surrounded it.

CYSTIC OVARIES.

Dr. RALPH WALDO, in the absence of Dr. C. C. LEE, who operated in the case, presented the ovaries removed from a patient on Friday last. The right ovary contained a cyst at least an inch and a half in diameter, while the tube was slightly enlarged. The left ovary contained a cyst the size of a filbert. The history of the case is as follows:

The patient was 33 years of age; had been married sixteen years; her menstrual history was normal until after the birth of her first child, which was born fifteen years ago. She had had two other children, one thirteen and the other ten years ago. She said the labors were very severe, although it was not necessary to use instruments. She had no abortions. She had what she termed childbed fever after the birth of the first child; she afterward had what she called falling of the womb, and since the birth of her last

child had had constant pain in the left side, lower part of the abdomen, and back. The pain was not worse during the menstrual flow, but the flow was much increased, and on one occasion continued two months with only three days' cessation. She had come from Texas. The slightest excitement would bring on the flow, consequently it was necessary to do the operation during the flow. She had lost no blood since the operation, and doubtless would go on and make a complete recovery.

The right ovary was removed because of the extent of the disease in it, and the left one partly because of its present condition, and partly because Dr. Lee feared the further development of cystoma. Only ten days before he had performed a second laparotomy on a patient for cystoma, the other ovary having been removed for the same condition several years before, when the one remaining was still in a normal state.

DR. GRANDIN inquired whether they had suspected malignant disease of the endometrium.

DR. WALDO replied that the patient's symptoms had been present ten years.

DR. GRANDIN said malignant disease of the fundus sometimes existed for years without giving rise to any special symptoms except menorrhagia. Had the tubes and ovaries been removed in this case for the purpose of bringing about the menopause, there would be reason to doubt whether it would prove successful. Dr. Waldo had stated, however, that the tumor was larger than one's fist, which fact in itself justified the operation.

DR. DUDLEY said he had witnessed the operation, which was a difficult one, and he was glad to hear that the patient was doing well. He wished to take this occasion to say, regarding operating during the menstrual flow, that he had done it several times, and he believed that it was a safeguard against the development of peritonitis, provided the toilet were made properly. It drained the vessels and relieved pelvic congestion. The patients whom he had operated upon during the menstrual period seemed to have done better than others operated upon when the uterus was dry. At any rate, he regarded menstruation as no contra-indication to laparotomy, and he did not allow it to prevent him from proceeding with the operation at once.

DR. R. B. TALBOT referred to the position in which the tube was found in some of these cases. Within a few days he had assisted Dr. Hanks in a case in which the left Fallopian tube was found glued down to the posterior wall of the uterus, even out to its fimbriated extremity, and seemed to have been in that position for years, although the woman had given birth to one or more children.

WARMING UTENSIL FOR THE CLAY ELECTRODE.

DR. A. H. GOELET presented a vessel, made of zinc, to contain hot water to keep the clay pad warm and ready for use in electrical treatment.

Dr. Goelet also presented a

UTERINE DRAINAGE TUBE

which he had employed with marked success in a case of endometritis seen in consultation a few weeks since, and in which he resorted to this means of carrying out the treatment recently advocated in a paper by Dr. Polk. The iodoform gauze which Dr. Polk employed as a drain would not have given free exit to the pent-up fluids in the uterine cavity in this case; consequently he introduced a perforated stem with an external flange, retaining it in position by iodoform gauze placed in the vagina. The patient made a satisfactory recovery.

Dr. COE thought the tube presented was like one used by Dr. Wylie.

Dr. WYLIE said it was more like the one made of glass and employed by Dr. Sims.

Dr. POLK was glad to learn that the value of the treatment which he had suggested in these cases had been appreciated and demonstrated by Dr. Goelet. The method of securing drainage did not in any way affect the principle involved.

(To be continued.)

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF PHILADELPHIA.

Stated Meeting, Thursday, January 2d, 1890.

Dr. THEOPHILUS PARVIN *in the Chair.*

Dr. C. P. NOBLE :

PROLONGED LABOR; PRESENTMENT V. R. O. P., WITH HEAD IMPACTED IN THE PELVIS.—CRANIOTOMY ON A DEAD CHILD AFTER FAILURE TO DELIVER WITH FORCEPS.

I was called in the afternoon of October 29th to see Mrs. K., in labor with her first child, in consultation with Dr. J. Howard Evans, the message being that I should be prepared to do craniotomy. I found Mrs. K. much exhausted, with a pulse of 110, skin dry, and face anxious. On examination the head was found in the pelvis, the long diameter of the head being parallel with the right oblique diameter of the pelvis. The labia and vagina were much swollen and dry, and a large caput succedaneum was present. The cervix was completely retracted. The urine, as drawn by the catheter, was distinctly bloody. The head was quite firmly impacted and the pelvic circulation much embarrassed. A diagnosis of the position of the head could not be made positively, owing to the large caput succedaneum. On auscultation the fetal heart could not be heard. A distinct odor of decomposition emanated from the vagina.

Dr. Evans gave me the following history: He was called at 1 P.M. to see Mrs. K., and was unable to get a very clear history, as the midwife in attendance was not disposed to make lucid replies to questions. The woman had been in labor about forty-eight hours, the waters having come away the preceding night. The head was arrested in the cavity of the pelvis, and the natural forces were evidently inadequate to complete the labor. Simpson's forceps were applied, and vigorous efforts made to effect delivery, without result other than the slipping of the forceps. Dr. Evans stated that he used all the power that he thought was justifiable, and more than ever before, and as this was ineffectual he considered craniotomy necessary.

The vagina was douched with corrosive sublimate solution, 1 : 4,000, and the vulva washed with the same. Hodge's forceps were applied and firm

traction made. The head would descend, but not enough to bring the brow into the pelvis. In the meantime a supply of ether was obtained and the patient got under its influence. The brow could now be distinctly felt above the brim and to the left. Further moderately strong traction failed to dislodge the head, the forceps tending to slip. In view of the edematous state of the tissues, force was considered unjustifiable. A further careful auscultation did not reveal fetal heart beats. This fact, together with the history, was considered satisfactory evidence of the death of the fetus. Craniotomy was determined upon in the interest of the mother.

The head was perforated with the Blot perforator, which I consider the best instrument of its class. I was much pleased to observe that only very dark blood escaped from the brain, confirming my opinion that the fetus was dead. The brain was broken up with the perforator, care being taken to destroy the medulla. Cranioclasis was then done with the Simpson cranioclast, and delivery effected by traction with the cranioclast. I succeeded in delivering without causing protrusion of any of the cranial bones. Simpson's cranioclast proved perfectly satisfactory and efficient, but would be a tiresome instrument to use in very difficult cases, owing to its lack of a fixation attachment, such as is possessed by Braun's modification. A douche of sublimate solution was then given, ergot administered, and the patient dressed as usual. The after-history was uneventful. The catheter was necessary for twenty-four hours. The urine became clear after two days. The temperature ranged from normal to 101° F. for some days, but the patient expressed herself as feeling well. There was no chill. Warm lotions were applied to the greatly swollen labia, and weak carbolyzed or sublimated vaginal douches given daily (the water used was boiled); iodoform suppositories were also employed. The fetor quickly disappeared, and the swelling subsided during the first week. The breasts gave no trouble, as is usual when they are not officiously meddled with. The patient was discharged well.

This case represents a class seldom met with. The right occipito-posterior position is the second most frequent position of the head in labor, but the natural forces, or at most a little aid with the forceps, are usually all that is necessary to effect delivery. The axis-traction forceps of Tarnier or Poulet is especially useful in these cases, because it supplies the necessary aid, and interferes but little with the normal movements of the head in labor. There was little, if any, contraction in the pelvis in this case, and doubtless had the forceps been applied before edema was present, especially axis-traction forceps, craniotomy would have been unnecessary.

DR. C. P. NOBLE :

A CASE OF INDUCED PREMATURE LABOR ; DELIVERY WITH HIGH FORCEPS ; CONJUGATE DIAMETER, EIGHT CENTIMETRES.

The following case is of more than usual interest, involving, as it does, questions of the highest importance to obstetric surgery :

Mrs. X., the subject of this report, is a small woman, four feet eight inches in height, and weighs one hundred pounds.

The following are the pelvic measurements : W., 29 centimetres ;

a. d. s., 24 centimetres; cr. il., 26 centimetres; ext. conj., $16\frac{1}{2}$ centimetres; c. d., 8 centimetres; c. v., $6\frac{1}{2}$ to 7 centimetres, estimated.

She has had four children. The first, a boy, was born after a labor of nineteen hours' duration. The forceps was applied, and the head so much injured ("mashed") that it died shortly after birth. The second, a girl, was born after a labor of fourteen hours, spontaneously. The third, a girl, was delivered by Cesarean section, by Dr. Howard A. Kelly, in the Kensington Hospital for Women. The fourth, a girl, was born after induced premature labor, at the thirty-sixth week. Concerning this labor, conducted by myself, I wish to speak in full. Before doing so, however, it will be well to refer more fully to the previous labors. The first labor was a very difficult one. The infant, whose head was crushed with the forceps, was not weighed, but was a small rather than a large baby. The second labor was also a very difficult one. The infant, a girl, was extremely small—so small and puny that it was not considered probable that it would live, which, however, it has done. This infant was not weighed, but from the statements of the parents and an aunt it is safe to say that it weighed about five pounds. The third child was born by Cesarean section, the mother being told that either craniotomy or Cesarean section would be necessary. I had the pleasure of seeing this patient in consultation before the operation, and concurred in the opinion given. The mother made a good recovery, but her getting about was delayed by a mild phlebitis, which attacked first the left, and later the right leg. The baby was a girl and weighed six pounds fifteen ounces.

Mrs. X. was told that should she become pregnant again it would be possible to deliver a living infant by inducing labor at eight months, which opinion has been verified by the result of her last labor.

On the 9th of November, at 2 P.M., Dr. Kelly introduced a flexible bougie into the uterus to bring on labor, as the pregnancy was estimated to be within four weeks of term. At 9 P.M. of the 10th, labor not having come on, I introduced a second bougie. At 11 P.M. pains began, which soon became regular and frequent. At 9 o'clock the following morning I introduced Barnes' dilators, sizes first and second, the second size being left *in situ*. This was forced out at 12 o'clock, when the largest size bag was introduced, filled, and allowed to remain. Shortly before 6 o'clock, the pains having continued frequent, regular, and strong, and the cervix being perfectly flaccid, I ruptured the membranes, hoping that the head, which had remained at the superior strait, would be driven down.

The patient was seen at this time by my friend Dr. Boyd. The head presented semiflexed, the occiput being directly in relation with the left ilium, the brow with the right ilium, the anterior fontanelle lower than the posterior. High up, in the region of the right sacro-iliac synchondrosis, I could feel a hand in relation with the side of the brow.

The pains continued regular and even stronger than before, coming on at intervals of three or five minutes, and so continued until 11 o'clock, when the patient became much exhausted and the pains less frequent and strong. At 12 o'clock the patient was quite worn out, the labor arrested, and the pulse, which had remained at or about 80 beats per minute, increased to 110 beats. The head remained movable at the superior strait.

Seeing that the time had come to interfere, I secured the assistance of Dr. Appelback and made ready to apply high forceps. The patient was etherized and put in the obstetric position, and the forceps applied. I found it impossible to use the forceps properly with the patient on the low bed, so she was removed to a table. Simpson's forceps was used. It was my intention to attach the traction rod of Dr. Reynolds, of Boston; but owing to the narrow space in the pelvis, and the fact that the cervix was not in the least retracted, I could not apply them. Downward and backward traction caused the head to engage, but the parallel shanks of the Simpson forceps put the perineum on the stretch to such an extent that rupture, beginning at the anus, was imminent (Simpson's forceps had been selected as least likely to mark the face of the child, one blade of the forceps being applied over the face). To avoid this pressure Hodge's forceps was applied, and efforts at delivery made after the method of Pajot. The trials, continued at intervals for forty minutes, brought the head on the perineum, and passed the obstruction. Delivery was completed at 2:30 A.M. of the 12th, forty-five minutes after the patient was removed to the table. The labor lasted twenty-seven and one-half hours.

The labor followed the mechanism characteristic of the flat pelvis. The head presented with the bitemporal diameter in the conjugate, the biparietal diameter being to the left. After repeated efforts with the forceps the head engaged in the superior strait. There was absolutely no room to spare, although the parietal bones overlapped. As the head descended, the maternal soft parts were crowded down in front of it, more especially the anterior wall of the vagina and base of the bladder, nor was it possible to get these tissues up until the obstruction was passed.¹

The baby was somewhat cyanosed when delivered, and did not breathe well until it was suspended, head downward, for some minutes. Crying was induced by friction along the spine with the hand, a method which I have usually found efficient. Some superficial bruises and abrasions were caused by the forceps, but these disappeared after a few days.

The puerperium was normal. A curious rise of temperature to 102° F. occurred near the close of the second week, but the temperature became normal within a few hours and remained so. No cause for this rise of temperature was apparent.

This labor was, to me, a most anxious one, and unquestionably attended with considerable risk, especially after the rupture of the membranes. What troubled me most was the knowledge that the scar from the Cesarean section might give way and necessitate laparotomy with suturing of the laceration, or hysterectomy. It seems probable that the line of union, secured by the modern method of multiple suturing of the uterine incision in Cesarean section, is stronger and less likely to give way during subsequent labor than after the old method of operating. The result in this case supports this view. When it became evident that the natural forces were

¹ The labor was completed without further special difficulty. The placenta was quite firmly adherent, but was delivered by compression of the corpus uteri and traction on the edge of the placenta. It was attached over the site of the Cesarean incision, which doubtless accounts for the adhesion.

Full antisepsis was employed as regards patient, hands, and instruments

not able even to make the head engage in the superior strait, the outlook for successful delivery with high forceps was not promising, and it seemed not unlikely that even this premature labor would have to be terminated by craniotomy. In my judgment, version was absolutely contra-indicated in this case.

The risk of rupturing the uterus more than counterbalanced any advantages, real or supposed, in having the head come last through this narrow pelvis.

When the forceps was applied I was in considerable doubt as to the result of its use. The bitemporal diameter, which was in relation with the conjugate, was clearly longer than that diameter, and the head could only come into the pelvis through moulding. This process was favored by the fact that the bones were soft from prematurity.

I was disappointed in not being able to apply the traction rods, which was impossible owing to non-retraction of the cervix. The method of Pajot was adopted, great care being taken to avoid force. This was especially necessary, as the anterior lip of the cervix was between the head and pubic bones, and the posterior lip between the head and sacrum.

The fetal measurements were taken three-quarters of an hour after birth.

Diameters.—B. p., 7.5 centimetres; b. t., 6.5 centimetres; b. m., 6.5 centimetres; s. o. b., 9 centimetres; o. f., 10.5 centimetres; o. m., 11 centimetres; t. b., 9.5 centimetres; f. m., 7.5 centimetres; b. acrom., 11 centimetres.

Circumferences.—S. o. b., 30 centimetres; o. f., 31.5 centimetres; b. acrom., 31 centimetres.

Length, 44.5 centimetres; weight, $5\frac{1}{4}$ pounds. It will be observed that while the measurements of the fetal head are considerably less than normal, this is especially true of the transverse diameters, and much less true of the vertical diameters. This is characteristic of labor in flat pelvis.

This case is of interest, especially for its bearing upon the subjects of the induction of premature labor, craniotomy, and Cesarean section. It is very exceptional that a living child is born through a simple, flat pelvis with a c. d. of 8 centimetres. In such a pelvis there is not more than from 6.5 to 7 centimetres working space during labor, the variation depending on the position of the cervix. That this woman has had two children born at term—one mutilated with forceps and one at the eighth month of pregnancy—is quite remarkable; for while the type of her pelvis is the simple flat variety, yet the transverse diameters are narrow, owing to her small stature. Clarke and Burns consider that a living child cannot be born through a pelvis with a conjugate of less than three and one-quarter inches. Ramsbotham fixes the limit at three inches, and Osborne and Hamilton at two and three-quarter inches. Parvin states that in case of a general pelvic contraction, if the true conjugate be less than 8 centimetres the choice must be made between embryotomy and Cesarean section. That this woman has been delivered of two children at term is explained by the small size of the children, and the fact that great moulding of the fetal head will, at times, result after long hours of powerful labor. This, however, can never be anticipated.

This woman is the type of a class in which spontaneous labor at term is

possible if the child be under size, but in which, with children of average size, craniotomy or Cesarean section will be necessary. If seen before term, the indication of premature labor affords a prospect of labor with the delivery of a living child.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF LONDON.

Wednesday, January 8th, 1890.

A. L. GALABIN, M.D., *President, in the Chair.*

Specimens.—DR. WILLIAM DUNCAN: Uterus with Multiple Fibroids; Diseased Kidneys, from a case where death from cerebral hemorrhage occurred during the fifth month of pregnancy. DR. J. MATTHEWS DUNCAN: Dr. Münchmeyer's Transfusion Apparatus. DR. CARTER: (1) Ovarian Cyst, partly glandular, partly dermoid; (2) Dermoid of both ovaries; (3) Lipoma of left labium majus.

SHOULD PREGNANCY BE TERMINATED PREMATURELY IN CASES OF PHTHISIS?

DR. WILLIAM DUNCAN read a memoir on this subject, based upon a case in his own experience. A woman, aged 27, had borne two children; both labors had been difficult, and symptoms of phthisis, to which she was already subject, increased during both pregnancies. Her period ceased in August, 1889. Two physicians of authority had seen the patient and considered that pregnancy, especially if it continued to term, would shorten her life. There was a cavity near the left apex; the lower part of the left lung and the upper part of the right showed signs of crepitation. The patient was placed in the lithotomy position, the cervical canal rapidly dilated by Hegar's dilators up to No. 22, the fingers inserted, and the fetus and membranes removed. The uterine mucous membrane was curetted, the cavity irrigated with a hot mercurial douche, and a twenty-grain iodoform bougie was introduced into the uterus and retained (there by a glycerin plug passed up to the os uteri. The operation, performed on September 14th, lasted twenty-five minutes. The patient made a good recovery. Dr. William Duncan believed that during pregnancy phthisis was not retarded, as was formerly believed, but hastened. This was especially the case in women between twenty and thirty years of age. When phthisis was progressive, in early pregnancy, there could, in Dr. William Duncan's mind, be no question but that the proper course to pursue, after careful consideration of the case in consultation, was to empty the uterus of its contents. This could safely be done in the manner indicated by the author. Even when the phthisis was stationary, it was safer to empty the uterus at once than to let

the pregnancy proceed to term. When the patient was seen for the first time late in pregnancy, the child being viable, the case was different. Dr. W. Duncan would be guided, under these circumstances, by the condition of the lungs. If phthisis were stationary, though well marked, he would wait till full term had nearly arrived, and then, in order to save the patient all suffering and the strain on her system consequent on natural delivery, he would dilate the cervix with graduated bougies, followed by the hydrostatic dilators, until it was sufficiently expanded to permit of delivery by the forceps or version, as the case indicated. Full antiseptic precautions would be taken. If, however, the pulmonary disease were markedly advancing, the interests of the mother and child would be best served by effecting delivery in the same manner without delay, instead of waiting until the full term had been reached.

DR. CULLINGWORTH observed that Dr. W. Duncan's patient had been under his own care. A physician had recommended that abortion should be induced, but that gentleman believed in a new treatment for the cure of pulmonary tuberculosis by inhalation of heated air. Dr. Cullingworth had not so much faith in that treatment, nor did he think that the chances of life in a pregnant phthisical woman were improved by the induction of abortion. He therefore declined to undertake or acquiesce in so serious a step. He was glad that Dr. W. Duncan had brought the subject before the Society.

DR. HERMAN thought that if Dr. William Duncan's view that the existence of pregnancy hastened a fatal termination in cases of phthisis were true, the induction of abortion would be proper treatment. Unfortunately, Dr. Duncan had not brought forward any scientific or sound statistical evidence in support of his doctrine.

DR. PLAYFAIR thought that the new line of treatment suggested by Dr. William Duncan's case was quite unjustifiable when phthisis was incipient, and liable to serious abuse. Dr. Duncan had very properly held a consultation before operating, and now openly submitted his case to the criticism of the Society; but others might dispense with such safeguards and shelter themselves under the authority of Dr. W. Duncan's name. When phthisis was advanced, the matter was different, but there were not sufficient grounds for concluding that the new treatment would materially check or alter the progress of the disease. Moreover, it was an open question whether, the mother being already the subject of advanced organic disease, the interests of the child should not be considered. On the whole, therefore, while he admitted the force of some of Dr. William Duncan's arguments, he believed that his case was a dangerous precedent, and that the course adopted by him would neither be generally adopted nor followed.

DR. PRIESTLEY, in a paper on the "Induction of Abortion as a Therapeutic Measure" (Transactions of the Obstetrical Society, vol. xxii., 1880), had laid down as a rule that abortion was only a legitimate operation when the life of the mother was so imperilled by the continuance of pregnancy that emptying the uterus presented itself as the only alternative to save the patient. He could not express any opinion on the present case, but it was hard to conceive any circumstances in which phthisis, without some other complication, would justify the induction of abortion. Since Cullen had first noted that phthisis was retarded during gestation, nobody had contradicted his statement till very recently, when it had been asserted that the disease progressed as usual during pregnancy. If the latter theory were true, Dr. Priestley still failed to see how the induction of abortion could be preferable to allowing the pregnancy to go on till term.

DR. CHAMPNEYS commented upon the pathological and ethical aspects of the case. What good abortion did, what harm pregnancy might do, was unknown. In diseases like cancer, and perhaps phthisis, where the mother's life was practically forfeited, her claims, as against those of the

fetus, deserved less attention. In diseases like eclampsia, which depended on pregnancy and would probably cease after pregnancy, it was recognized as a proper proceeding to procure abortion. To procure abortion on the grounds that the child would be in any way unhealthy was very questionable. As phthisical women were often very prolific, Dr. Champneys asked how many times Dr. William Duncan was prepared to procure abortion, as he was logically bound to do if he were right on this occasion, in this or any similar case. Dr. Champneys also failed to see any reason for *accouchement rapide* in this case.

DR. J. MATTHEWS DUNCAN said that it was not established that pregnancy injuriously affected the progress of phthisis. Consumptives often bore fine, healthy children, and the danger of the fetus being infected by tubercle in the mother's system was apparently not great. If removal of the fetus were decided on, he could not prefer the rapid method of delivery.

DR. AMAND ROUTH noticed that phthisis, more or less stationary during pregnancy, often advanced rapidly during lactation. It was lactation, therefore, that ought to be suppressed. Only in some cases where, late in pregnancy, the child being viable, dyspnea was urgent, could the induction of labor be justifiable.

DR. LETH NAPIER thought that a waiting policy was the wisest. In his experience a very advanced case of phthisis had improved during pregnancy and recovered from labor at term, whilst abortion in phthisis was a grave matter.

DR. JAMISON did not agree with the author of the paper as to the justifiability of the practice therein recommended. The cure of tubercular disease by hot inhalations after labor was not in accordance with the every-day experience of phthisis. The children of phthisical mothers did not necessarily die soon after birth; on the contrary, they were often quite healthy and remained free from consumption throughout life. Pregnancy, according to all but a very few authorities, did not accelerate the progress of phthisis; indeed, Dr. Jamison believed that it retarded the disease. He wished to know if the physical signs in Dr. W. Duncan's patient had improved since the induction of abortion. The statement of the patient as to her own feelings was never reliable in phthisis.

DR. ABRAHAM WALLACE held that the subject of phthisis in relation to pregnancy lay on the borderland of pure medicine and midwifery, and ought not to be approached from the standpoint of the obstetric specialist alone, but required to be considered in all its aspects.

DR. WILLIAM DUNCAN, in reply, said that he was very glad that the question had evoked such an active discussion. He could not quite agree with the opinions expressed by the various speakers. He dissented from the assertion that "pregnancy should not be terminated unless it threatened the patient's life." He mentioned the case of a patient in the Middlesex Hospital who last year had severe puerperal eclampsia. Recently, when five months pregnant, she was readmitted with acute nephritis, double optic neuritis, and retinal hemorrhages. The ophthalmic surgeon having stated that if the pregnancy were allowed to go on, the patient would probably become blind, Dr. W. Duncan had no hesitation in emptying the uterus. He thought that the induction of abortion gave a distinct advantage by doing away with the dangers connected with parturition and the puerperium. He did not, of course, mean that all cases of phthisis complicating pregnancy called for interference. Each case must be judged on its merits and after careful consultation with another physician, who should share the responsibility. Neither did he mean that, having once terminated pregnancy in a given case, the same treatment should be pursued if impregnation took place. On the contrary, if the patient neglected the warning given to her, she (being entitled to choose) took the responsibility and must submit to the risks. Dr. Duncan regretted that he could give no statistics either proving that life was shortened in these cases or showing the effect of pregnancy on a phthisical woman. He was, however, one of those who did not believe much in statistics. The statements on these points were those which were given in all the leading works on obstetrics.

FIVE CASES OF PUERPERAL ECLAMPSIA, ESPECIALLY ILLUSTRATING THE TEMPERATURE AND URINE IN THIS DISEASE.

DR. HERMAN, the author of this communication, described five cases :

Case I.—First pregnancy : premonitory symptoms a few hours only before fits ; convulsions commencing during first stage of labor at term ; not ceasing with delivery ; ceasing after morphia ; seven fits in all ; temperature rising slightly during fits, falling after cessation of fits ; diminution in quantity of urine during fits ; diuresis after delivery and cessation of fits ; urine during fits nearly solid with albumin (much paraglobulin), blood, and casts ; rapid disappearance of albumin and blood after delivery ; diminished elimination of urea during fits ; increased elimination of urea following delivery. Complete recovery.

Case II.—Second pregnancy : premonitory symptoms three weeks before fits ; intra-uterine death of fetus ; fits coming on at eight months' pregnancy ; eight fits ; fits ceasing after morphia and before delivery ; slight pyrexia, continuing four hours after last fit, then abating ; polyuria throughout temporarily increased after delivery ; urine containing half its bulk of albumin (much paraglobulin) ; increase of albumin following fits ; albumin diminished after delivery, but still persisting even months afterwards ; diminution of urea elimination during fits ; restoration to normal of urea excretion commencing after cessation of fits ; retinitis albuminurica.

Case III.—First pregnancy : premonitory symptoms forty-eight hours before onset of fits, at five months' pregnancy ; about sixteen fits ; spontaneous premature delivery ; urine solid with albumin (largely paraglobulin) ; cessation of fits, fall of temperature, and diminution in albuminuria following administration of morphia, and preceding delivery ; diminution of urine and of urea excretion (both absolute and in proportion to the urine) during period of fits ; re-establishment of urine and urea excretion commencing after cessation of fits and before delivery. Recovery.

Case IV.—Ninth pregnancy : symptoms a week before fits, at seven months' pregnancy ; three days' treatment by milk diet in hospital before fits ; retinitis ; four fits only ; morphia given after second fit ; death by coma five hours after last fit ; subnormal temperature ; fits preceded and accompanied by slightly increased diuresis ; albuminuria diminished by rest and milk diet ; fits accompanied and followed by increase of albuminuria and hematuria ; steady diminution in urea percentage preceding fits and continuing till death ; absolute urea excretion diminished throughout, but no greater diminution preceding or accompanying fits. No autopsy.

Case V.—First pregnancy : symptoms about thirty-six hours before fits, at eight months' pregnancy ; intra-uterine death of fetus ; twenty-four fits in all, extending over sixty hours, ceasing before delivery ; delirium for forty-eight hours after fits ; slight pyrexia, subsiding before cessation of fits ; during period of earlier fits urine solid with albumin and diminished in quantity, but percentage of urea not diminished ; increase in quantity of urine and percentage of urea, and diminution of albuminuria before cessation of fits. Complete recovery.

The author points out the differences between the cases themselves and between them and other published cases, and draws the inference that puer-

peral eclampsia is a disease not having a uniform clinical history any more than a uniform morbid anatomy.

DR. PRIESTLEY found it difficult to discuss Dr. Herman's important paper in all its bearings. He was struck with the absence of that high temperature, as indicated by the thermometer, which Continental writers held to be usually present during the progress of puerperal convulsions. The same foreign authorities noted that, on the other hand, in convulsions the result of general uremia the temperature fell progressively until death. The question was disputed by Winkel, Charpentier, and others. Dr. Herman's valuable memoir proved that much more was to be learnt, and that puerperal eclampsia had not a uniform clinical history.

DR. HORROCKS indorsed the last words of Dr. Priestley and distinguished at least two forms of puerperal eclampsia. In the first variety there was no albuminuria. This form he treated as epilepsy complicating pregnancy, giving large doses of bromide of potassium (in one case ninety grains) by the rectum. In the second form, albumin appeared in the urine; the administration of morphia was dangerous in this variety of eclampsia, especially when the uremic element prevailed. He had found that the temperature rose, as a rule, in eclampsia; in some cases he found that it continued to rise for a few hours after death.

DR. W. S. A. GRIFFITH remarked that there were two points in the clinical history of the nephritis of pregnancy, with or without eclampsia, about which information was much needed: Firstly, in what proportion of cases had there been any evidence of pre-existing nephritis, complicating scarlatina or diphtheria, for instance? Secondly, how many cases died eventually from or with kidney disease? According to what he had learned from Dr. Gee, very many cases did in later life develop symptoms of chronic nephritis. The disease was not so temporary as was generally believed.

THE PRESIDENT thought that Bourneville's theory that eclamptic attacks raised whilst uremic lowered the temperature, applied not only to separate cases, but to the different elements in the same case. If, therefore, the uremic convulsions, as evidenced by diminished secretion of urea, preponderated in proportion to the frequency of the convulsions, it might be expected that the elevation of temperature would be interfered with. He asked if this principle would explain any of the anomalies observed in Dr. Herman's cases. In the President's experience, it was chiefly in untreated cases that very marked elevations of temperature occurred, and chloroform or bleeding especially counteracted it. In one case, untreated until the patient was moribund, he had found the temperature as high as 110° .

In reply, DR. HERMAN, after referring to disputes amongst foreign authorities, assented to Dr. Horrocks' division of puerperal eclampsia into two forms. The cases where albuminuria was very slight differed from those where the urine almost solidified on boiling. All the cases now related had one feature in common—a diminution in the excretion of urea during the time in which the fits were occurring. These cases, so far as they went, did not support the view that the elevation of temperature was in proportion to the number of the fits. In case 5, where the fits were the most numerous, the highest temperature was not attained.

TRANSACTIONS OF THE GERMAN GYNECOLOGICAL SOCIETY.

SECTION XVIII. OF THE SIXTY-SECOND ANNUAL MEETING OF GERMAN NATURALISTS AND PHYSICIANS.

HELD AT HEIDELBERG, SEPTEMBER 18TH, 19TH, 20TH, AND 21ST, 1889.

Second Day—Morning Session (Continued).

KALTENBACH (Halle) read a paper on

THE PATHOGENY OF PLACENTA PREVIA.

The etiology of placenta previa—chronic endometritis, absolute or relative enlargement of the placental rudiment—is pretty well known, but the pathogeny of these conditions is more obscure. There is a lack of appropriate anatomical material, and so long as the descriptive anatomy of the placenta is not clear it is altogether impossible to understand their origin. Examinations of parturient women, or frozen sections of cadavers of women who had died *sub partu*, can furnish no satisfactory explanation of the condition during pregnancy. For this we require specimens of placenta previa in connection with the uterine wall from the earlier months of pregnancy. The first case which can be completely utilized was demonstrated by Hofmeier at Halle, and led at once to a surprisingly simple definition of placenta previa: as a placental development within the reflexa of the lower pole of the ovum. A second specimen of the same author presented similar conditions. To-day I am able to exhibit a third specimen which confirms Hofmeier's view. The specimen is a carcinomatous uterus from the beginning of the fourth month of pregnancy. The entire cervix is infiltrated with carcinoma; the internal os is closed. The placental rudiment takes up more than half of the entire periphery of the ovum. Above the internal os is a cup-like free space within which the ovum has not yet coalesced with the opposite uterine wall. This space is covered over by a placental lobe developed in the lower pole of the ovum, and therefore can have formed only within the reflexa.

A primary insertion of the ovum directly over the internal os appears inconceivable. An ovum which failed to find attachment higher up can find it still less at this point, where the continual current of the secretions or contractions would carry it away. The reflexa would become elevated all around the margin of the os and overlap the ovum above; the entire ovum would develop from below upward, which has never yet been observed. Even when the ovum becomes implanted near the internal os, a projection of the reflexa must always first surround the ovum below and overlap it above. Hence the internal os can only be covered over by a segment of the ovum which is surrounded by reflexa and thus represents merely the cen-

tre or a portion of the primary serotina. If in an ovum *in situ* placenta is found over the internal os, it must have developed within the reflexa.

A development of placental tissue within the reflexa is readily understood by the developmental history and course, even in the formation of the normal placenta. The definitive space occupied by the placenta is determined not only by the widening and greater superficial growth of the serotina, but also by the fact that portions of the reflexa which contain chorion become attached to the opposite vera at the margin of the original serotina. The well-known coalescence of reflexa and vera is not confined merely to the reflexa without chorion, but takes place also between the villous reflexa and vera during the earlier period of fetal life.

The only thing which is remarkable and pathological is when placental villous tissue continues within the reflexa until the end of pregnancy.

In order to make this possible, the reflexa must show great development in bulk and vascularization; on the other hand, certain causes must counteract the coalescence of reflexa and vera—for instance, hypersecretion from the free surface of the vera. Both conditions are fulfilled in the various forms of chronic endometritis. The purpose which is served by the persistence of chorionic villi within the reflexa is the metabolic requirements of the ovum. The fetal heart, which is forced to the strictest economy, does not maintain the circulation in a single chorionic villus which could be spared in the fetal existence. On the other hand, the fetal heart will maintain the circulation in a portion of the chorionic villi within the reflexa whenever the typical placental development is disturbed, whether by atrophy or by hyperplasia of the endometrium with hypersecretion. This brings about the formation of an abnormally large, generally thin placenta, which appears as previa when placental tissue is developed within the reflexa of the lower pole of the ovum.

Placenta previa, therefore, appears as a partial manifestation of a process of equalization by which the fetal organism supplies its need of oxygen and nutrition. Nevertheless, abortion occurs often, to be sure; or else the chorionic villi, which in the earlier period of pregnancy had been preserved in the reflexa of the lower pole of the ovum, undergo subsequent atrophy, after the ovum has overcome the obstacles presented to it by the decidua located at the wall. In a number of cases, however, the placenta persists to the end of pregnancy, and in that event there may be a tardy complete coalescence of the placental lobe, which is covered with reflexa, with the opposite uterine wall.

Another kind of accommodation by which an ovum with small base, whose placental development had been disturbed, can secure the necessary superficial and vascular connection with the maternal tissue, is that the placenta develops beyond the point of duplication of the reflexa into the vera. This produces the placenta with margins overlapping the poles, as it were, which clinically appears in the form of placenta marginata.

The well-known frequent coincidence of placenta previa and marginata is easily understood from this point of view, that both anomalies owe their origin to certain efforts at equalization in the case of disturbed placental development. Both conditions predispose to hemorrhages and abortion, because the ovum, having a relatively small base, readily suffers dangerous traction, or because the fetus dies prematurely by reason of an insufficient

supply of oxygen and nutrition. The fact that in one of Hofmeier's and my own case partial placenta previa was associated with carcinoma of the uterus, is to be ascribed to the corporeal endometritis usually present in this condition. In this aspect, too, endometritis manifests itself as the predominating causal factor in the etiology and pathogenesis of placenta previa, which it causes partly directly by leading to an originally low implantation of the ovum, partly indirectly by giving rise to enlargement of the placental rudiment.

HOFMEIER (Würzburg) thought that other anomalies of the placenta (velamentosa, succenturiata) originate in the same way. Any other mode of origin of placenta previa than the one stated, he thought, was impossible. The cause is not lack of oxygen of the fetus, but simply endometritis. All the nutritive conditions at first are better at the periphery; subsequently whatever is not required for the nutrition of the fetus becomes atrophic.

HOFMEIER (Würzburg) read a paper on

THE INFLUENCE OF PATHOLOGICAL CONDITIONS OF THE DECIDUA SEROTINA UPON THE NUTRITION OF THE FETUS.

The following cases form the basis of the paper:

1. IIIpara, delivered three weeks before term. The child weighed 2,000 gm., length 46 cm., circumference of head 32 cm. The placenta showed important pathological alterations in the decidua.

2. IIIpara, labor at term; heart sounds inaudible. The child was fully developed, death having occurred a short time previously. The autopsy did not throw any light on the cause of death. The placenta was normal in shape, but showed below the chorion innumerable gray patches the size of a pea, which on microscopical examination proved to be decidual proliferations extending from the serotina to the internal surface, that is to say, through the entire thickness of the placenta. The chorionic vessels were not quite normal. Otherwise neither the course of labor nor the autopsy showed any cause of death but the changes mentioned.

3. Premature labor in the sixth month. The child dead only a short time. The placenta came away spontaneously and presented a white appearance. The microscope showed small-celled infiltration of the serotina and the intervillous space which had started from the decidua.

The nutrition of the fetus is disturbed by these alterations in the decidua. The above-described proliferations of the serotina are much more frequent than has been hitherto assumed. Such changes will be demonstrated in the placenta of children who, though born at full term, do not show the average degree of development. Subsequently, however, the children may thrive well. In conclusion H. pointed out the forensic importance of the question (estimating the maturity of the children without examining the placenta).

G. KLEIN (Würzburg) read a paper on

THE ORIGIN OF PLACENTA MARGINATA.

Hofmeier's explanation of the causation of placenta previa has recently been fully confirmed by Kaltenbach. Both authors found in the first period of pregnancy (from the second month on) that in appropriate specimens the placenta was broadly attached to the lateral wall of the uterus.

From the margin of the placenta a thickened, largely developed circumflexa (reflexa) passed over to the fetal membranes in such a manner as to lie like a bridge above the internal os. Since chorionic villi corresponding to the thickened circumflexa had formed plentifully—or had failed to atrophy—this portion must be designated as a part of the placenta developed on the circumflexa, and, as it lies over the internal os, as placenta previa. Kaltenbach has pointed out that a similar mode of origin obtained in placenta marginata: the circumflexa, thickened by transudation or exudation, does not permit the villi to extend peripherally on the serotina; acting as a constricting ring, it would force the villi—provided abortion did not occur before—to spread below the ring into the vera, to proliferate centrifugally in the latter, and thus to form the bordering ridge present in placenta marginata, above which, toward the centre, is visible the characteristic whitish ring on the fetal side of the placenta which has been mentioned before. This explanation agrees with that of Schultze and partly with that of Schatz. It is true, the latter assumes that it is the thin pedicle of the ovum, which often has a polypoid insertion, that causes the proliferation of the chorionic villi into and under the vera, the villi not finding sufficient room and nutrition on the small serotina.

By the examination of mature placenta marginata and ova from the earlier period of pregnancy the author has arrived at a different explanation. Like Kaltenbach, he starts from the fact that the circumflexa, where it separates from the vera—that is, near the margin of the placenta—is much thickened in the first months, and may afford nutriment to the villi even when the remainder of the villi had become atrophic (chorion læve). This thickened marginal portion the author terms "thickened marginal circumflexa." Its physiological function, the nutrition of the villi, may exceptionally continue to the end of pregnancy; as has been stated, it leads occasionally to the development of placenta previa, in other cases to the formation of placenta succenturiata when only insular patches persist as the matrix of the villi, separated from the main placenta by atrophic circumflexa.

In the course of pregnancy—about the second month—the thickened marginal circumflexa usually atrophies and wilts, and then forms a yellowish, moderately firm mass which covers the fetal membranes near the edge of the placenta. It may be thickened by transudation, but more frequently by exudation (endometritis deciduae). In that event it lies as a constricting ring around the ovum in the region of the margin of the placenta in such a way as to form an obstacle there to its growth, the ovum being narrowed in the shape of a biscuit; for above the ring expands the cavity of the ovum, below it the placenta, and between them lies the contracted furrow of the circumflexa. Thus is produced immediately above the fetal margin of the placenta a fold projecting inward, beneath which the cavity of the ovum is deepened into a pocket. This stage has been designated by Schatz as placenta circumvallata. This condition is particularly pronounced in a placenta from an abortion, the photograph of which the author exhibited.

The fold thus formed, which projects inward toward the cavity of the ovum, therefore, is covered on the outside with thickened marginal circumflexa, and may persist to the end of pregnancy; by the pressure within

the ovum the fold is then forced against the fetal surface of the placenta. On the other hand, the increasing internal pressure may throw the fold outward, turn it over. As the circumflexa below the ring has been bulged outward by the villi, the turned-over fold is made to lie on this part of the circumflexa which covers the marginal eminence of the placenta: the furrow of the circumflexa becomes a small fissure invested above and below with circumflexa. The latter, being doubled under the chorion, appears as a white ring, beneath which the marginal eminence of the placenta projects outward—*placenta marginata*. Accordingly this develops in such cases by a generally inflammatory thickening of the marginal circumflexa which constricts the ovum like a ring and forms a fold that finally is turned over to the outside. *Placenta circumvallata*, then, would be an earlier stage of the *marginata*. Of course the white ring may be materially thickened from below by the decidua subchorialis. (These conditions were illustrated by drawings and charts, partly schematic, partly copied from specimens.)

Certain forms of *placenta marginata*, characterized by a narrow, thin ring lying far to the outside, might perhaps be interpreted in this way. At an earlier period the villi from the serotina bulge out the adjoining vera without proliferating into it; in that event the explanation of Schultze, Schatz, Kaltenbach, and others would apply—namely, that the marginal eminence of a *placenta marginata* is covered with vera and circumflexa. As is well known, the first author to describe this form of placenta, Kölliker, has designated the ring as vera plus circumflexa; so did Küstner (the latter, however, on the erroneous ground of a difference in growth between uterus and placenta), C. Ruge, and Veit.

Further details and reasons for the anomalous explanation given by the author in connection with the drawings will be published in the *Zeitschrift f. Geburtshilfe und Gynäkologie*.

KALTENBACH defended the view for some, though not for all forms of *placenta marginata*, that the villi penetrate centrifugally into the vera, because the narrow serotina does not offer room enough for them.

HOFMEIER objected that if this were true the marginal eminence should consist of decidua alone, perforated by villi, or the latter should cause a broad fissure of the vera. The former cannot be demonstrated in specimens; the latter, *per se*, it is difficult to imagine.

KLEIN stated that he had admitted the possibility of Kaltenbach's explanation being correct for the above-mentioned *placenta marginata* with thin ring and a narrow marginal eminence. He called attention to the fact, however, that a really deep penetration of the villi into and beneath the vera would be so aggressive a procedure as could not be accorded to them in harmony with other experiences. When the villi grow from the serotina at the placental margin toward the vera, the latter rises, proliferating above the mass of villi; but then it can no longer be designated as vera, but as circumflexa, for the vera which passes from the uterine wall to the ovum is called circumflexa.

STEFFECK (Würzburg) read a paper on

THE WHITE INFARCTION OF THE PLACENTA.

The causes hitherto assigned to the origin of white infarction of the placenta are defective, in that they cannot be generally applied. The only certain method of gaining information as to the constituents and origin of the infarction consists in making serial sections. Three microscopical appearances are continually met with: 1, the infarction appears as a perfectly

homogeneous striated tissue; 2, as a retiform structure in which the trabeculae of the network likewise consist of homogeneous tissue, while cells and cell remnants lie in the meshes; 3, as altered decidua. On tracing marginal infarctions, it is clearly seen that the homogeneous tissue is nothing else but decidua. It is possible to follow plainly the course by which the normal decidua passes through all the changes until it becomes a homogeneous tissue which formerly was always taken for fibrin. These alterations in the decidua can be studied still more accurately in the smallest infarctions, which are usually situated in the middle of the placenta. They are easily divided into serial sections, and from the appearances it is certain that such an infarction always arises primarily in the decidua. The infarctions which lie centrally close under the membranous chorion seem to speak against this mode of origin. This would require, first of all, the proof that decidua passes through the entire thickness of the placenta and extends to the so-called fibrinous nodes on the fetal surface. Both facts are well known to be disputed. But a series of one hundred and twenty sections through a subchorionic "fibrinous node" proved to me clearly that indeed, in a fully normal and mature placenta, decidual tags extend to the membranous chorion, where they form what has hitherto been designated as fibrin. Hence I maintain that an infarction arises in the placenta only where there is decidua, and that it is composed of altered decidua and changed villi. The primary condition is always a degeneration of the decidua. Where the latter surrounded neighboring villi, these likewise perish whenever the decidua is obliterated.

In the discussion of the three papers on the placenta, KALTENBACH pointed out that the thickened marginal eminence may consist of endometritic masses.

KLEIN and HOFMEIER objected to Kaltenbach's theory that the chorionic villi are not aggressive enough to penetrate deeply into the vera; if they were, they would divide the vera likewise into two layers.

KALTENBACH accepted Klein's explanation, but for a portion of the cases would adhere to his former view.

FEHLING confirmed Hofmeier's statements on the strength of the paper read by him before the Strassburg meeting of the Association. He had rarely found infarctions in normal cases, often in persons with chronic nephritis (alteration of the decidual vessels by dense infiltration of small cells). The normal and the pathological infarctions must be kept separate. He agreed with Hofmeier as to the viability of the children. Especially in the case of twins confirmatory observations could be made. In general, children with a well-developed large fontanelle—that is to say, with a well-arranged nervous system—had a better chance for further development.

STEFFECK had examined chiefly normal placentae, but he believed that all infarctions arise in the same manner.

HOFMEIER coincided with him.

HEGAR referred to his book on the pathology of the ovum, in which he had brought the excessive development of the serotina at the margin of the placenta into connection with abortion and placenta previa. But the reflexa had never appeared particularly vascular and viable; therefore he could not accept Hofmeier's explanation.

Aside from white infarction, the defective development of the child might be connected with hydrorrhœa gravidarum in hyperplasia of the decidua.

FLOTHMANN (Ems) read a paper on

THE DIAGNOSIS AND TREATMENT OF HEMORRHAGES FROM THE UTERUS
STARTING FROM A RETRO-UTERINE HEMATOCELE.

In a woman who had previously menstruated regularly, a hematocoele formed, it is said in consequence of a ruptured tubal pregnancy. The left tube could be felt as a tense cord in connection with the ovisac which dipped into the hematocoele. F. incised the latter, and claims to have demonstrated by finger and sound the direct communication of the hematocoele with the uterine cavity. Pressure on the hematocoele always caused blood to escape from the uterus. This blood, as well as that obtained by aspiration of the effusion, was mucous, dark, tarry.

FEHLING did not accept the explanation given. He had demonstrated interstitial endometritis as the cause of hemorrhages in hematocoele.

CZEMPIN believed that, in the case cited, the blood came from the uterus direct. In diseases of the adnexa there is a hemorrhage of reaction from the endometrium, which latter may be quite healthy.

KLEIN called attention to the fact that in tubal pregnancy the uterine end of the tube is closed.

W. A. FREUND failed to see the proof of the existence of tubal pregnancy, or of the sounding of the tube.

BUMM (Würzburg) read a paper on

THE ETIOLOGY OF SEPTIC PERITONITIS.

The path by which streptococci get into the abdominal cavity in septic peritonitis of the puerperium is either by way of the tubes or of the lymph vessels. Directly it is scarcely demonstrable with certainty. In cases running a very acute course, we find in the abdominal cavity a light sero-purulent fluid which under the microscope is seen to contain, besides pus corpuscles and fibrin, long masses of streptococci. At the same time the peritoneum need not be altered. The fluid is exceedingly infectious. One-fourth of a drop introduced into the peritoneum of an animal is rapidly fatal. In cases which are less acute the fluid is purulent and less virulent; if the streptococci are cultivated, the peritoneum must almost be inundated with them in order to produce infection. Hence we have to deal with a change in virulence.

A second form of septic peritonitis is one occurring after operation. In this, it is true, a streptococcus-peritonitis by direct introduction is possible, but is very rare nowadays. In "operation-peritonitis" B. found a mixture of all varieties of fungi, cocci, and bacteria; only once he found streptococci. Gelatin inoculated was liquefied and acquired a disagreeable odor. On plate cultures the most variable fungi developed, and, strange to say, were innocuous. The sanious fluid from the peritoneum is not so infectious as the pus of the first-described form. Greater quantities are required for the infection of animals; generally the injected masses are encapsulated. The clinical symptoms confirm the distinction made between the two varieties of peritonitis; in the former the fever is of sudden onset and continuous; in the latter it rises slowly. The main difference between them is that in the first form truly infectious micro-organisms are active, while in the second we have to deal with secondary effects of the fungi. If the peritoneum has been roughly treated over large surfaces, then fungi which were at first harmless may finally produce a putrid infection. It is not known whether mixed forms occur.

B. believes that it is bacteriology which will clear up this entire question. He would distinguish three forms of peritonitis:

1. Irritation-peritonitis (for instance, in gonorrhea).
2. Infectious peritonitis:
 - (a) Streptococcus-peritonitis (for instance, puerperal).
 - (b) Putrid peritonitis (perforation- and operation-peritonitis).
3. Specific peritonitis (for instance, tuberculous).

LOEHLEIN spoke of a case in which infection of a puerpera arose from the umbilical wound of a new-born child in which streptococci were demonstrated. Septic peritonitis; alcohol treatment; recovery. L. believed that the virulence of the streptococci had been very rapidly weakened.

KEHRER, in Müller's "Handbuch," had made the same classification as Bumm.

HEGAR said that though he would not declare himself as decidedly against "operation-peritonitis" being a putrid form, he thought that Bumm's series was not exhaustive. The forms of peritonitis occurring after operations may be quite acute, though not streptococci but other bacteria could be demonstrated. He laid stress on insufficiently cleaned linen as a source of infection. He desired to hear from Bumm whether he had had further experience with circumscribed forms of parametritis.

BUMM answered in the negative. His numerous investigations had by no means as yet exhausted the subject.

BATTLEHNER would not admit that all forms of perforation-peritonitis are putrid. Especially in those starting from the vermiform appendix he found staphylococci and saprophytes from the intestines in the exudation.

FEILING, in an encapsulated parametritis, had no longer found streptococci in the aspirated fluid. But the process had been of several months' standing, and for this reason the case did not contradict Bumm's views.

Second Day—Afternoon Session.

KALTENBACH presented a patient on whom

VENTRO-FIXATION OF THE UTERUS

had been performed. Nine labors; pendulous abdomen; retroflexion of the uterus, with hemorrhages and violent sacralgia. The abdominal walls had been divided only down to the peritoneum, so as to make the operation as harmless as possible. The uterus, having been crowded forward by an assistant, was stitched to the unopened peritoneum, and, after having been thus fixed, was sewed with a few wire sutures to the periosteum of the symphysis. The sutures were allowed to remain for a long time. Cure. The uterus has remained in the position given to it; the hemorrhages and sacralgia have disappeared. K. has performed ventro-fixation five times. He believes the indications for the operation to be very restricted, on the one hand because the permanent results are not certain, and on the other hand because associated conditions (pendulous abdomen, relaxation of the peritoneum, etc.) in many cases overshadow the clinical picture.

KEHRER read a paper on

OSTEOMALACIA.

The disease is relatively frequent in certain countries and districts—for instance, on the borders of the Rhine and its confluent (in Heidelberg K. has observed thirty osteomalacic patients in eight years), in the Ortona valley in upper Italy, etc.; in other localities, as the province of Brandenburg, Saxony.

Hungary, it is very rare. It is to be included among the chronic endemic diseases (lepra, beriberi, etc.), and possibly is to be ascribed to the action of osteolytic bacteria. In favor of this view are the facts of its focal occurrence in isolated bones, and the mode of bone destruction (first decalcification, then liquefaction of the necrotic substance). The disposition exists in women during a later pregnancy, puerperium, and lactation. Bad nutrition, damp dwellings, and other noxa can be excluded in about one-third of the cases, according to K.'s observations. It is doubtful whether there is a family or tribal disposition.

The chief symptom is pain on pressure upon the affected bones during active and passive movements.

It is only after long duration, often after repeated attacks, that there follows shortening of the body, especially of the trunk, with approximation of the thorax to the pelvis, pendulous abdomen, deep lumbar curvature, and flexion of the sacrum. The pelvis bends together first in the sagittal direction and becomes flat; accordingly the mechanism of labor in anterior vertex positions is the ordinary one. Later the bases of the acetabula move toward the median line (beak shape of the ossa pubis, pointed arch or omega shape of the pubic arch), then follows the characteristic shortening of the distance between the trochanters, which leads to a flexion of the curve formed by the three transverse measurements of the pelvis. (The author exhibited a number of such curves.) Aside from the thorax (widening of the base, barrel shape, flexion of the sternum, dorsal kyphosis and scoliosis), changes of attitude and curvature of the lower extremities occur; the upper extremities, neck, and head usually escape. The course is characteristic. Attacks lasting many months, even years, alternate with intermissions in which the capacity for locomotion and work gradually returns, and there is not only arrest of the softening of the bones, but actual cure, that is to say, regeneration of the bone; this was demonstrated by K. in several sclerosed but markedly flexed pelvises. If no new pregnancy occurs, the recovery is definitive in many more instances than is generally supposed, in so far as the patients are free from pain and resume their former activity. K. knows of cases in whom the disease began two decades ago, and who now feel quite well, apart from the consequences of the changes in the skeleton. Care in the selection of a good habitation, nutrition, and clothing, as well as the long-continued use of warm full and saline baths, will in many cases effect a cure; unfortunately, however, the conditions often do not permit the carrying out of these measures.

Thus far, K. has never performed castration for the cure of the bone disease.

BATTLEHNER has had very good results in osteomalacia by the treatment with cod-liver oil.

FEHLING has already observed thirteen cases of severe osteomalacia in Basle; in Saxony, where rachitis is so frequent, he had never seen it. For this reason he likewise assumes an endemic spread. Otherwise no positive data bearing on heredity are available. A fungus could hardly be the cause of the disease, since improvement occurs after castration. Osteomalacic patients usually have very many children; perhaps we have to deal with a trophoneurosis starting from the ovary. With the removal of the latter the trophoneurosis disappears.

Up to date F. has operated on seven severe cases with excellent results. Winckel and Hoffa had each operated on a case with good results.

MUELLER (Berne) had performed castration in two severe cases; result excellent. The operation should not be done too late if the process is to be cut short.

KEHRER showed some

APPARATUS FOR INSTRUCTION.

1. A glass case containing in the centre a short, moderately stout tube adjustable on a hinge, for showing the position of the vaginal portion of the uterus and the direction of the os.

2. Clay and zinc plates with engraved letters, figures, etc., to be placed in a box and palpated in order to perfect the tactile sense.

3. Plaster casts of the bladder taken from the cadavers of pregnant women with unopened abdomen.

VON HERFF (Halle) read a paper on

CAUSES OF DEATH AFTER LAPARATOMY.

1. Affections of the heart. Aside from fatty and brown atrophy, the author directs particular attention to degeneration of the heart muscle occurring in consequence of long-continued chloroform anesthesia. Death occurs after prolonged, increasing collapse (Strassmann's experiments on animals), especially when the body was weakened in other ways, as by hemorrhages during operation. This degeneration does not occur after ether.

2. Diseases of the lungs. Besides hypostasis, the author mentions broncho-pneumonia, in which secretions of any kind passing down the throat are of etiological importance. Pneumonia develops particularly in weakness, defective action of the heart, retention of secretion when free coughing is impeded. In patients previously suffering from lung disease the danger, therefore, is especially imminent. In these cases ether anesthesia is dangerous on account of the abundant secretion of saliva which it causes.

3. Kidney diseases. As the excretion of albumin is increased after prolonged chloroform anesthesia, and, according to Scheede, fatty degeneration of the kidney epithelium may be caused by the employment of sublimate, the author advises caution in the use of anesthetics and antiseptics in albuminuria, especially in cirrhotic kidney.

KALTENBACH, in discussing the paper, reported the following cases:

(a) Ovariectomy on a woman, aged 74, with arterio-sclerosis. Collapse after thirty-six hours of well-being; sopor; death. Autopsy showed cirrhotic kidney.

(b) Young parturient, in good health during the first six days. Sudden collapse, repeated several times. Death. Both kidneys cirrhotic.

(c) Healthy young primipara. Narrow pelvis. Examination under anesthesia in the evening. Labor terminated by the attending physician after several hours. Anesthesia lasted one and one-half hours (failure of forceps, perforation). After twenty-four hours of well-being, sudden collapse and death. Autopsy. Acute fatty heart.

HEGAR.—Cases of death from chloroform caused by degeneration of the heart are very rare; he could barely recall two. Broncho-pneumonia he had seen more frequently, whether ether or chloroform was used, whether the patients were weakened and operations prolonged or not. Sometimes the contents of the stomach are at fault; persons who did not vomit after the anesthesia were now and then attacked; others vomit and cough everything up. As to cirrhotic kidney he fully agrees with Von Herff.

FEHLING.—Chloroform nearly always acts profoundly on the kidneys; in

a great many cases the urine contains albumin, sometimes also casts. Hence when nephritis is present chloroform anesthesia alone may be fatal.

KLEIN reported the following case:

Woman over 60 years old. Myomectomy. Unsatisfactory anesthesia with bad pulse. After operation, almost complete anuria. Traces of urine showed large masses of casts. Infusion of salt solution was without effect; death. Old nephritis; large patches of kidney epithelium were destroyed (chloroform). No bacteria in the kidney.

MUELLER rejects ether anesthesia on account of the respiratory disturbances connected with it.

LOEHLEIN (Giessen) read a paper on

THE IMPORTANCE OF THE MENSTRUAL EXFOLIATION OF THE MUCOSA.

He recommended in the first place the adoption of the term "menstrual exfoliation of the mucosa" instead of "membranous dysmenorrhea" or the designation recently preferred, "exfoliative endometritis." For dysmenorrhea forms only in about one-half of the cases an essential symptom of the process, which, therefore, would be frequently overlooked if it were expected solely in dysmenorrhic patients. Moreover, its interpretation as inflammatory or connected with inflammatory conditions applies to the majority but not to all observations. The clinical symptoms and the appearance of the membranes often approximate more closely to those of an early pregnancy than the inflammatory formations. The term chosen has the advantage that it does not prejudice the process and that it excludes the confusion with the expulsion of blood clots, of the products of pregnancy, and of membranes of vaginal epithelium.

Among about three thousand patients L. has been able to follow the condition accurately and for a long time in twenty-five cases. This frequency is much greater than that gained in polyclinical activity. The affection was observed six times in connection with puerperal or non-puerperal parametritis and perimetritis, four times in connection with abortion, two of them being after a badly attended, imperfect abortion with protracted after-hemorrhages. Four times (three of them in young girls) over-exertion and taking cold during menstruation, with suppression of the catamenia or their postponement after the action of various noxa, was assigned as the point of origin, and once the influence of a damp dwelling which had, besides, caused grave rheumatic disease in a young married woman. Twice the affection followed a recent endometritis; while chronic endometritis, both the glandular and the interstitial forms, was more frequently demonstrated during the curetting performed in the treatment of the disease. Of especial interest is the fact that among the relatively small number there were two couples of sisters, two unmarried young women with neurasthenic taint, and two married sisters, one of whom had first observed the passage of membranes seven months after marriage; the other, sterile though married for seven years, had submitted to discussion. It would be hazardous, on the strength of these limited numbers, to speak of an anatomical disposition of the mucosa to a menstrual exfoliation, by the side of the acquired form, were it not that the author had made another observation of the process in mother and daughter.

Where the exfoliation occurred after preceding deliveries, the pains were usually slight during menstruation; this was true also of nulliparae whose cervix had been dilated by a cutting operation or who had been curetted.

Whenever the exfoliation of the membrane is no longer rendered difficult by the narrowness of the canal, violent symptoms are the exception. Should they occur, they can be greatly moderated by appropriate treatment. The cases in which the symptoms are so violent that, after all remedies have been employed in vain, castration is determined upon, are probably such as are complicated with serious disease of the adnexa.

Of special importance is the question as to the power of conception. Contrary to other authors, L. observed pregnancy six times in his twenty-five cases. Of these six women, one had borne four children and aborted three times when the affection appeared, as it did, in connection with parametritis. After suffering for one year, she was curetted, when the membranes formed more rarely and were thinner. Conception followed. The second patient had aborted and suffered from after-hemorrhages for four months when the exfoliation developed, sixteen years previously; she bore children fourteen and ten years ago; in the meantime the exfoliation is said to have been the same as at present. In the other four cases the affection existed three times before marriage, once it followed soon after. In two of these cases conception was preceded by curetting. Only once L. observed the permanent disappearance of the affection, though under the circumstances it was not possible to ascribe this positively to the treatment employed. Intermissions for months and marked diminution of the products were secured in a large number of cases by curetting followed by injections of iodine.

Third Day—Morning Session.

President, BATTLEHNER (Carlsruhe).

KREYET (Mühlhausen) read a paper on

THE RELATION OF PHYSICIANS TO MIDWIVES IN THE PRESENT STATE OF ANTISEPSIS; WITH DEMONSTRATION OF A MIDWIFE'S BAG.

K. advises that midwives should be admitted to polyclinical and private practice, so as to allow them to see the physician operate and learn from him. Irrigations should not be made by midwives in normal cases; should they be required, only sterilized water is to be allowed.

THIEM (Kottbus) read a paper on

EXPERIENCES WITH THE VAGINAL LIGATURE ACCORDING TO SCHÜCKING'S METHOD, WITH A PROPOSED MODIFICATION.

T. first anteflexes the uterus, if necessary under anesthesia according to Schultze. An assistant crowds the bladder to the left side with a catheter. Injury to the intestine is excluded. Then a Schücking's needle, not threaded, is introduced into the uterus and passed out through the anterior fornix, after which a waxed thread is put in, and the needle as it is withdrawn is finally passed back again through the anterior lip of the os. Both ends of the thread are then tied in the vagina. Small vesical hemorrhages occur, but have no more bad effects than lesions of the bladder, as has been demonstrated. The ligatures are allowed to remain for several days, although, as a rule, the slight adhesive peritonitis suffices to keep the uterus

in ante flexion within two or three days. For safety's sake a Thomas pessary is inserted. Advanced age is no contra-indication. T. has had failure in prolapsus, and therefore rejects the operation for this condition. The operation is said to be simple and can be performed by any physician. While Schücking in his first series of twenty cases had eight failures, he together with Thiem now has thirty-six cases with good results.

In answer to a question by Löhlein as to the permanent results, T. stated that the last cases were done only three months ago; but Schücking had cures of two years' duration. One patient bore a full-term child in normal labor.

LÖHLEIN had examined a woman operated on by Schücking; in her the uterus lay in deep retroflexion.

THIEM referred to his above statement that Schücking at first had had some failures.

BAYER (Strassburg) read a paper on

THE INDUCTION OF PREMATURE LABOR AND THE TREATMENT OF CERVICAL STRICTURES BY THE CONSTANT CURRENT.

He distinguishes the gynecological from the obstetrical application of galvanism. In gynecological cases, mainly the catalytic effects of the current are utilized. Hence the applications are stable without variation in intensity; the currents are very strong; cells are coupled and broken by means of the rheostat; small active and very large indifferent electrodes are used; the dosage is accurately controlled by the galvanometer.

In obstetrics, however, the contraction-exciting effect of galvanism is sought. Hence we use labile currents with interruptions, perhaps Volta's alternating currents or intermittent galvanization; usually weaker currents suffice (up to twenty or twenty-five milliamperes); large positive electrode; the surface of the negative pole as large as the cervical canal permits.

The effects are:

1. Loosening and widening of the cervix. For this reason alone the constant current is to be recommended, at least as a preparatory method in the induction of premature labor, also for preparing a rigid and undeveloped cervix even where labor occurs spontaneously. For this purpose stable currents are more appropriate.

2. The production of contractions. In this respect it has to be ascertained—

- (a) Whether the constant current excites contractions, and if so—

- (b) Whether it forms a reliable method for the induction of premature labor.

With reference to (a) the author has seen a case in which it was not possible to excite contractions by the constant current. Brühl, however, has described three cases in which this effect did not occur. The author said the mode of application employed by Brühl (only stable currents, the cathode usually in the anterior vaginal vault) is not correct. He also pointed out that among Brühl's seven cases there were four generally contracted and one osteomalacic pelvis. When the pelvis is generally contracted, the uterus is often abnormally torpid. Such uteri are characterized also by a remarkable insensibility to other inductive measures.

A temporary torpidity of the uterus likewise occurs (Schatz).

The absolute failures were ascribed by the author to torpidity of the uterus. He thought that in such cases electricity had a certain diagnostic value, and he advised to test the excitability of the uterus with the galvanic current before other methods are employed.

(b) The pains excited by galvanism may again subside. For this reason, long pauses between the sittings are unsuitable. The author, therefore, recommends instead of the sound electrode a small sponge which is connected with the conducting cord by a thin wire placed in a drainage tube. The sponge is to be introduced into the cervix and left there. The periodical application of the anode to the abdomen at intervals of ten to five minutes may be done by the midwife in the absence of the physician. As soon as the uterus begins to contract, the current is opened. If a spontaneous pain sets in after the determined interval, the closure of the current is omitted. If regular spontaneous pains have succeeded for some time, the sponge is removed.

In this way electricity may be continued for hours. At times it is desirable to suspend it for some time. In the cases where the premature labor is induced prophylactically in the interest of the child, a few days more or less are usually of no consequence; but where the operation is done owing to danger to the mother, without regard to the child, electricity has no advantages, and in that event it will be better to perforate the membranes after forcibly dilating the cervix.

However, despite regular pains the labor at times does not advance. This is frequently due to a defective development of the cervix. When the lower segment is normally formed, then during the pains the ridge of contraction is kept far apart by the tension of the ovum, so that no narrowing can be felt under the presenting part. In defective development, however, the contractile muscular structure reaches down below the tip of the ovum or the presenting part. Then we feel during the pain a contraction, a "physiological stricture." This may be thinned to a sharp muscular ridge when the lower portions of the cervix first loosen and then dilate. By abnormal irritations this physiological is changed to a "spastic" stricture. It is particularly in induced premature labor that a disposition to this condition exists, because the cervix is more frequently insufficiently developed.

In these cases it is important to keep the membranes intact and the pains regular. But even when these are present, a "physiological stricture" forms first, until the tissue yields by loosening. Therefore, under such circumstances, galvanism exerts no expulsive power. As the main thing here is the loosening, that is to say, the catalytic effect of the constant current, the stable application is to be recommended until the stricture has disappeared. Of course the cathode must be applied directly to the stricture.

Hence the author recommends the stable application of the electrodes where the loosening of the tissue and the quieting effects of the current are desired; but intermitting galvanization where contractions are to be produced. That is to say:

1. For the induction of premature labor, especially where the cervix is but slightly prepared (where the lower segment is normal and the cervix is well prepared, the constant current has no material advantages over other methods).

2. For the preparation of an undeveloped and rigid cervix, even when the onset of labor is spontaneous.

3. For overcoming cervical strictures.

BROESE (Berlin) recommended the galvano-faradic current in obstetrics as exceedingly stimulating to the muscles. Perhaps the external application of both electrodes will suffice.

KEHRER related a case of myoma of the right broad ligament. The patient was galvanized but once by a specialist. A peritonitis followed and ended fatally on the sixth day. The cause was rupture of a closed blennorrhoeic tube.

BROESE (Berlin) read a paper on

SOME MODES OF APPLICATION OF THE FARADIC CURRENT IN GYNECOLOGY.

B. regrets the neglect of electro-therapy in German gynecology. At present he employs currents from a helix with thin wire and many spirals, because they are under a greater tension than those from thicker wire. Unipolar or bipolar (Apostoli) faradization may be performed both from the vagina and from the uterus. B., in connection with Hirschmann, has devised a useful bipolar electrode which is straight, easily disinfected, and not attacked by the uterine secretion. Its employment is said to be easy and effective.

In order to obtain an analgesic effect, the anode must be brought into the vagina, and the cathode, in the shape of a large plate, applied to the abdomen; strong currents may be used. This method acts excellently in all pains starting from the ovary (oöphoritis, chronic peri-oöphoritis). The first sitting should be prolonged until the ovary becomes almost or quite insensible; the number of the following sittings is variable (four to thirty-five). The effect is said to be permanent. Among twenty-five cases of oöphoritis B. has had twenty-one permanent cures, two improvements, two still under treatment. In subinvolution faradization has a good effect by exciting uterine contractions.

The residues of perimetritis and parametritis, however, derive but slight benefit from faradization. In an acute exudation B. observed a certain analgesic effect. This is true also of dysmenorrhea.

Fourth Day—Morning Session.

President, SCHAUTA (Prague).

H. W. FREUND (Sfrassburg) read a paper on

THE NORMAL AND ABNORMAL MIGRATORY MECHANISM OF GROWING OVARIAN TUMORS.

Taking for a paradigm the growing pregnant uterus, F. first pointed out the manner in which an ovarian tumor migrates normally from the lesser into the true pelvis. In the first stage, so long as the tumor still finds room in the lesser pelvis, it lies behind the uterus, which it lifts slightly and crowds to the opposite side. The structures forming the pedicle, not being twisted, pass along the anterior surface of the tumor. In the second stage, the tumor, having grown through the upper aperture into the abdominal cavity, falls forward against the anterior abdominal wall, where it develops

further. It crowds the uterus backward without necessarily giving rise to a retroflexion. During this act a torsion of the pedicle always arises. The structures forming the pedicle pass behind the tumor. The bladder is depressed in the centre from above.

The following deviations from this normal mechanism occur:

1. The tumor cannot migrate; for instance, in intraligamentous development and in the case of broad adhesions in the lesser pelvis.

2. The uterus cannot migrate; for instance, in the case of adhesions and secondary tumors in the neighborhood and of the organ itself, sometimes in pregnancy.

3. Bilateral ovarian tumors at times mutually hinder their migratory mechanism.

4. Tense, unyielding abdominal walls do not permit the tumor to fall against the anterior wall. This happens chiefly in nulliparae, but especially in persons of infantile development.

The paper was based on two hundred cases of ovarian tumors from the Strassburg gynecological clinic:

FEHLING (Basle) read a contribution to

THE PERFORMANCE OF PROLAPSUS OPERATIONS.

F. did not intend to consider the rare forms of prolapsus which Freund had discussed in the first session, but the most frequent varieties in which the primary sinking of the vaginal wall is associated with cystocele, descent of the uterus with infarction of the vaginal portion and elongation of the cervix—cases mainly caused by injuries in physiological and pathological labors and in the puerperium. He particularly referred to voluminous prolapsus, in which the vagina is inverted and the vaginal portion is likewise involved. He intended to discuss failures which every operator now and then meets with; these arise on the one hand from the habit of considering anterior colporrhaphy as a small auxiliary operation. Remembering the etiology of most cases of prolapsus, it is necessary to make the excision of the mucosa as thorough as possible in anterior colporrhaphy. On the other hand, it is bad practice in cases of voluminous prolapsus to perform in one sitting amputation of the vaginal portion, anterior colporrhaphy, and colpoperineorrhaphy, because the latter two operations then cannot be made extensive enough, otherwise the lateral bridge of mucous membrane remains too narrow. The prolonged rest in bed (four to five weeks) required when the operation is performed in two sittings is no disadvantage, but is very desirable as securing better results. It is only in long-continued horizontal position that the peritoneum and its folds, especially where it covers the bladder and uterus, will be sufficiently shortened by reason of its elasticity to keep the uterus in place when supported by narrowing of the vagina. Another cause of failure is that the recent wound of anterior colporrhaphy not given the rest during the recovery which every surgical wound requires. Every breath, cough, laughter, filling and emptying of the bladder, by turns stretches and shortens the wound and later the fresh cicatrix.

F. therefore proposes, analogous to the operation for posterior colporrhaphy devised by Freund and Martin, to perform a double instead of a single anterior colporrhaphy, since this leaves the median flap which is most

endangered. After amputation or wedge-shaped excision of the cervix, he makes two parallel incisions in the centre of the anterior vaginal wall at a distance of one to one and one-half centimetres, which run somewhat obliquely toward the introitus. From the point, which is about one and one-half centimetres from the cervix, a second incision is then made on both sides in such a way as to circumscribe an oval vaginal flap on each side, the axes of which converge slightly toward the cervix. Detachment is effected rapidly and easily; at the side the venous hemorrhage is at times more profuse. Deep wire and superficial silk sutures are used. On removing the sutures the cicatrix is found at that point of the H-shaped (Henle) vaginal cross-section where the vertical bars cross the transverse ones.

At a second sitting colpo-perineorrhaphy is done. If at this time the anterior vaginal ridge still projects somewhat, it is preceded by a small median anterior colporrhaphy with a running catgut or silk suture. In this way the final results are far superior. F. has operated sixteen times in this manner, and demands further trial. From an historical point of view he recalled similar attempts by Simon (bilateral colporrhaphy), by Emmet—who made three small wound surfaces in front of the cervix—and by Velpeau.

MUELLER (Berne) read a paper on

VENTRO-FIXATION OF THE PROLAPSED UTERUS.

He disproved the objections raised against the operation in general, as to its magnitude, the sufficiency of other measures, and mutilation. It is true, he had operated only in the most serious cases, about twelve to fifteen times. The results were not very favorable; in but few cases were the prolapsed uterus and vagina permanently retained; in some the vagina again prolapsed, in others both uterus and vagina, within a short time. In one case a large abdominal hernia formed. In a few cases the failure was to be ascribed to the hypertrophy of the cervix which is not remedied by the operation. In many patients the abdominal adhesions stretched; in others the uterus remained fixed to the abdominal wall, but at the point of fixation a funnel-shaped depression developed so that the uterus again prolapsed. It makes no difference whether the uterus is amputated, freshened, or not, when stitched to the abdominal wall. Judging from his experience, M. is not able to call the results of ventro-fixation in general favorable.

KEHREK has operated twice in the same manner as Fehling, and was well satisfied with the results. In a very severe case of total prolapsus which had recurred often, he had successfully performed complete extirpation.

HOFMEIER had attempted to counteract the injurious effects of respiration and filling of the bladder, on the wound of anterior colporrhaphy, by lateral position, but the results were unsatisfactory. He was well pleased with Fehling's proposition. Cases in which extensive prolapsus is due to relaxation of the peritoneum cannot be cured by our plastic operations. He had occasionally seen Schroeder perform ventro-fixation; the results were not favorable.

W. A. FREUND agreed with Fehling that the performance of several operations at one sitting is not desirable, especially when they are finished in a few minutes, which is done now and then. Fehling's proposition should be welcomed because it leaves the anatomical relations intact, particularly because the anterior rugous column is not cut away and stitched over. Freund had been forced to remedy by difficult operations vaginismus and violent pain during coitus which had resulted in young women in con-

sequence of anterior and posterior colporrhaphy with stitching over of the column, performed by other operators. Ventro-fixation he had performed years ago as an occasional operation, but had never obtained any success worthy of the name; besides, after extraperitoneal myomotomy, too, the stump always retreats from the abdominal walls.

BAUMGAERTNER had extirpated the entire uterus for prolapsus, but a hernial protrusion subsequently developed.

FEHLING had had three cases of ventro-fixation of the uterus which had been preceded by anterior and posterior colporrhaphy. In two of these the result had been excellent, now for four or five years; one had relapsed. In the latter, Douglas' pouch had been abnormally wide.

MUELLER had performed total extirpation three times for prolapsus; twice colporrhaphy had to be done subsequently.

CZEMPIN had observed no ill effects after operations done at one sitting by Martin, whenever catgut was employed. Klotz had operated similar to Freund in sixteen cases. He had passed a glass drainage tube into Douglas' pouch and gradually withdrawn it, so that extensive adhesion of the posterior surface of the uterus was secured.

SCHAUTA, in performing posterior colporrhaphy for a voluminous prolapse, had opened Douglas' cul-de-sac; he had immediately sutured the edges of the laceration, drawn down the sac beneath the peritoneum, and resected it. Permanent recovery.

After a vote of thanks to Dr. Kehrer, the President adjourned the meeting.

REVIEWS.

TRANSACTIONS OF THE AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS. Vol. II. Illustrated; pp. 390. Wm. G. Dornan, Philadelphia, 1889.

This volume, similar in style and beauty of make up to that issued last year, contains the full text of the matter abstracted on pages 1082 to 1115 of this JOURNAL for 1889, to which our readers are referred.

TRANSACTIONS OF THE AMERICAN GYNECOLOGICAL SOCIETY. Vol. XIV., for 1889; pp. 474. Wm. G. Dornan, Philadelphia, 1889.

An abstract of these proceedings may be found on page 1048 *et seq.* of this JOURNAL for 1889. Besides the full text of the matter treated in the abstract, the volume contains the seven papers read by title and the essays of the newly-elected Fellows. It fully maintains the high standard of excellence set and expected of this Society.

ABDOMINAL SURGERY. By J. GREIG SMITH, M.A., F.R.S.E. *Third Edition.* 81 Woodcuts; pp. 800. P. Blakiston, Son & Co., Philadelphia, 1890.

The distinguished author is to be congratulated on the high degree of excellence attained in this work, and its appreciation by the profession—an appreciation which has rendered this third edition necessary only two years after the appearance of the first. The present volume, while unchanged in general plan, contains many recent modifications in operative and other detail, and has been brought closely up to date.

ESSENTIALS OF GYNECOLOGY. By EDWARD B. CRAGIN, M.D. 58 Woodcuts; pp. 190. W. B. Saunders, Philadelphia, 1890.

This is the one of the numerous family of "quiz-compendis," is arranged in the form of questions and answers, and is good of its kind. It is prepared

to assist the "cramming for examination" which proper preliminary training, and honest hard work during the three years supposed to be devoted to medical study, should render unnecessary. We do not think the use of these compends advisable, save occasionally for the final review of a subject, and feel that their use must lead to habits of superficial observation and parrot-like acquisition on the part of the student.

A HANDBOOK OF THE DISEASES OF WOMEN. Including Diseases of the Bladder and Urethra. By F. WINCKEL, M.D., Professor of Gynecology and Director of the Royal University Clinic for Women in Munich. Authorized translation. Edited by THEOPHILUS PARVIN, M.D. Second Edition. 152 Woodcuts; pp. 756. P. Blakiston, Son & Co., Philadelphia, 1889.

In this edition the few errors and omissions found in the first have been corrected, and a section of ninety pages upon diseases of the female urethra and bladder added, condensed from the author's well-known monograph on that subject. The book is clearly printed, of an attractive form and make-up, and is especially valuable on account of its conservatism in surgery and the prominence it gives to gynecological therapeutics.

TRAITÉ DE PETITE CHIRURGIE GYNÉCOLOGIQUE. By PAUL F. MUNDÉ. Translated from the Second American Edition by EMILE LAUWERS, M.D. 321 Woodcuts; pp. 606. A. Manceaux, Brussels, 1890.

This translation shows that Dr. Mundé's work is appreciated by the French-speaking medical profession. The volume is very handsomely printed, and the translation is in every respect perfect, and very creditable to Dr. Lauwers, who has also added a few explanatory footnotes. It is to be regretted that the translator and publishers did not respond to the suggestion of the author that proof sheets be sent him for such corrections and additions as the experience of five years since the appearance of the original edition would call for. It may be added that this translation supplies a want long felt in French medical literature.

PRACTICAL ELECTRICITY IN MEDICINE AND SURGERY. By G. A. LIEBIG, JR., Ph.D., and GEORGE H. ROHÉ, M.D. 252 Illustrations; pp. 380. F. A. Davis, Philadelphia, 1890.

The part of this work treating of the science of electrical forces is clear, comprehensive, written in a most scientific spirit, and certainly reflects great credit on its author. A close study of the mathematical and technical details of this part of the work will well repay the practitioner who wishes to acquaint himself with the physical laws governing this mysterious force. The work of an expert in electro-physics is clearly shown in this portion of the book.

The same cannot be said of the second half, which treats of the therapeutic applications of the electrical current. The author of this part is evidently not an expert, since it is entirely wanting in original observations. We find nothing but quotations from well-known authors on electro-therapeutics. To no one subject does this criticism apply more forcibly than to that of the "Diseases of the Female Genital Apparatus." Here the author's remarks seem to be merely a reproduction of Apostoli's now universally known methods; and even these he does not appear to have correctly comprehended, since, for instance, he states that the electrical treatment of pelvic exudations and of uterine fibroids is essentially the same. If the author has correctly understood Apostoli's practice, we can but say that the recommendation to puncture pelvic exudations (the extra- or intra-peritoneal situation of which it is not always possible to determine) only shows that the diagnosis in such cases should be made by a gynecological expert, and not by an electrician or an incompetent observer. In thus following Apostoli's, often entirely too positive, recommendations, the author is, perhaps, not to be blamed too severely; but in order to prove his point he has found it necessary to go out of his way to attack the statements of a writer with whom he is not personally acquainted, and who has no knowledge of having done

anything to incur his animosity. Thus on page 350 he attempts to prove the utility of the long since abandoned practice of treating ovarian tumors by electrolysis by criticising a paper of Dr. Mundé's on that subject published in the Transactions of the American Gynecological Society for 1877, in which Dr. M. computed the ratio of mortality and failure from electrolysis in the hands of different operators as 45 per cent, "or double the mortality from ovariectomy even in the hands of our less successful operators of to-day (Mundé)." He then says, "The absolute mortality was 20 per cent. Dr. Semeleder reports his personal experience with electrolysis" . . . as giving "an absolute mortality of 12.5 per cent." The author now resorts to the disingenuous expedient of quoting from a report on laparotomy made by Dr. M. in 1887 (ten years after his electrolysis paper)--where of 22 operations for ovarian tumor performed in one year, 5 were fatal, a mortality of 22.7 per cent--and asks, "Is Dr. Mundé to be numbered among our less successful operators?" To utilize the record of one year's ovarian tumor operations, where there happened to be an unusually large number of difficult cases and a correspondingly large mortality, as a proof in favor of so absurd and obsolete a method as electrolysis of ovarian tumors, shows either an ignorance on the part of the author of the statistics of ovariectomy or a desire to force his own view at all hazards. A reference to Dr. Mundé's case-books will show a series of sixty-five successive ovariectomies with but *one* death, and is sufficient refutation of the author's ungenerous imputation. His motive for thus going out of his way to establish an untenable argument must be left to the judgment of the profession.

The book is well printed, the illustrations are good, and with the exception of those parts where the absence of personal experience is but too evident, it may be pronounced a useful addition to the physician's library.

B. H. W.

TENTH INTERNATIONAL MEDICAL CONGRESS.

INVITATION

TO TAKE PART IN THE PROCEEDINGS OF THE SECTION FOR OBSTETRICS
AND GYNECOLOGY, TENTH INTERNATIONAL MEDICAL CONGRESS,
BERLIN, 1890.

IN accordance with the resolution of the Ninth International Medical Congress held at Washington, the Tenth International Medical Congress will be held this year at Berlin, opening on the 4th of August, and continuing till the 9th of August, 1890. The delegates of the German medical faculties and medical societies of the German Empire have elected us, the undersigned, as members of a sectional committee of organization. We have the honor to invite you cordially to take part in the proceedings of our Section. We hope to enjoy the satisfaction of welcoming large numbers of our confrères at Berlin, and of seeing our sectional meetings numerous attended. We append the programme of our Section, as far as yet fixed upon, with the request that any further proposals for addresses, papers, or demonstrations may be sent in at your earliest convenience.

Hoping that the meetings of the Section may prove interesting and useful to the advancement of science, we remain, most respectfully,

(Signed)

FRICTH, of Breslau,	KALTENBACH, of Halle,
HOFMEIER, of Würzburg,	OLSHAUSEN, of Berlin,
MARTIN, of Berlin.	HEGAR, of Freiburg,
GÜSSEROW, of Berlin,	LOEHLEIN, of Giessen,
WINCKEL, of Munich,	

Committee of Organization for the Section of Obstetrics and Gynecology.

PRELIMINARY PROGRAMME.

For our work we have three full days at our disposal, and also on the days of the second and third general meetings a few hours in the forenoon.

The morning hours we propose to devote to the exhibition and explanation of preparations, instruments, etc., and (possibly) also to the performance of operations.

The time from 10 to 1 o'clock on the three days, on which there is no general meeting, we intend to devote to papers and communications on the subjects named below, which will be followed by a free discussion and by such addresses on matters connected with the subject in hand as have been announced and accepted by the committee.

In the hours from 2 to 4 o'clock the other papers and addresses offered and accepted will be heard in the order fixed by the committee of the Section.

As subjects for the morning meetings (10-1) are proposed :

1. Antisepsis in Midwifery. Introduced by Galabin, of London. Discussed by Stadfeldt, of Copenhagen; Slavjanski, of St. Petersburg; Fritsch, of Breslau.

2. Artificial Premature Labor, its Indications and Methods. Introduced by Th. Parvin, of Philadelphia. Discussed by Calderini, of Parma; Macan, of Dublin; Dohrn, of Königsberg.

3. Vaginal Extirpation of the Uterus. Introduced by Williams, of London. Discussed by Pozzi, of Paris; Schauta, of Prague; Olshausen, of Berlin.

4. Electrolysis of Myoma. Introduced by Apostoli, of Paris. Discussed by Th. Keith, of London; Eph. Cutter, of New York; Zweifel, of Leipzig.

EXTRACTS FROM THE GENERAL REGULATIONS AND PROGRAMME.

At the meetings of the sections, questions and problems will be discussed which have been agreed upon by the special com-

mittees of organization. The communications of those appointed by the committee to report on a subject shall form the basis of discussion. As far as time allows, other communications or proposals of members, sanctioned by the committee of organization, may also be introduced for discussion. The committee of each section decides as to the acceptance of such communications, and as to the order in which they shall come before the meeting, provided always that this point has not been already determined in the meeting itself by a vote of the section.

Scientific questions shall not be voted on.

Introductory addresses in the sections must not, as a rule, exceed *twenty minutes in length*. In the discussions not more than *ten minutes* will be allowed to each speaker.

All addresses and papers in the general and sectional meetings must be handed over to the secretaries, in writing, before the end of the meeting. The editorial committee shall decide whether, and to what extent, these written contributions shall be included in the printed Transactions of the Congress. The members who have taken part in the discussions will be requested to hand over to the secretaries, before the end of the day, in writing, the substance of their remarks.

The official languages of all the meetings shall be German, English, and French. The regulations and programme for the day will be printed in all three languages. It will, however, be allowable to make use of other languages than the above for brief remarks, provided that one of the members present is ready to translate the gist of such remarks into one of the official languages.

Those who take part in the Congress shall each pay a subscription of twenty marks (§5) on being enrolled as members. For this sum they shall receive a copy of the Transactions. The enrolment shall take place at the beginning of the Congress. Gentlemen may, however, be enrolled as members by sending the amount of the subscription to the treasurer, Dr. M. BARTELS, Berlin, S.W., Leipzigerstrasse 75, together with their name, professional status, residence, and visiting-card.

All other communications concerning this Section should be addressed to the managing member, Dr. A. MARTIN, Berlin, N.W., Moltkestrasse 2, who will also be glad to hear from those who are desirous of exhibiting instruments or appliances in the scientific exhibition of the Congress. All other communications should be sent to the Bureau of the Secretary-General, Dr. LASSAR, Berlin, N.W., Karlstrasse 19.

THE AMERICAN
JOURNAL OF OBSTETRICS
AND
DISEASES OF WOMEN AND CHILDREN.

VOL. XXIII. MAY, 1890. No. 5.

ORIGINAL COMMUNICATIONS.

THE DIAGNOSIS OF PREGNANCY.¹

BY

GIDEON C. SEGUR, M.D.,
Hartford, Conn.

IN approaching the subject of pregnancy, we find there are three classes of women to deal with: 1. Those women who have no intention to deceive, but in whom the condition of pregnancy is doubtful. 2. Those who desire to become pregnant. 3. Those who fear they are pregnant, but do not wish to bear children.

To the physician, then, the objective signs are those to be first and fully considered, without undue weight to those subjective symptoms that may or may not be thrust upon his attention with more or less stress according to the desire of the patient. Yet in the early months of pregnancy the objective symptoms are less manifest, and render a diagnosis in many instances impossible; hence the subjective symptoms, unreliable as they are, must form the basis of that decision of the physician for which he has been consulted. In the ordinary cases of a family practice the physician can say: "It is

¹ Read before the Hartford Medical Society, November 18th, 1889.

impossible to say positively; we will wait a month, and by that time we may be better able to form an opinion."

In some cases, however, this answer will not do, and the question comes: "But, doctor, what do you think?" It might perhaps be better to decline making a diagnosis, even under such pressure; yet few would feel disposed to turn a patient away dissatisfied, especially if he desired to retain his professional relations with that family. Under such circumstances the subjective symptoms must be obtained with as careful questioning as possible, so as to give each its proper due, but no more; and having learned, if possible, the bias of the patient, to weigh all the evidence in that light. It may be that the moral character of the patient is at stake, as well as the reputation of the physician; in which case a refusal to pronounce a diagnosis should be most firmly persisted in until *positive* assurance can unhesitatingly be given.

Mundé ("Pregnancy, Parturition," etc.) says: "By far the safest plan is to consider every woman, whether married or single, who comes to you for the diagnosis of this condition, or for treatment of uterine disease during the child-bearing period, as pregnant until you have satisfied yourself to the contrary."

Sensation attending Fruitful Intercourse.—The most natural order of consideration of the signs of pregnancy would seem to be that in which they most commonly present themselves; and first among these may be placed the fact that some married women claim to be able to tell from the peculiar sensations attending fruitful intercourse that conception has taken place. So eminent an authority as Cazeaux is inclined to attach some importance to this experience. But this occurs only in an occasional case at most, and consequently can hardly be *expected*; hence it is that a full menstrual period must be passed before attention is directed to a possible or probable pregnancy by the

Cessation of the Menses, or its failure to return at the usual time. This is usually the first thing to attract the attention of the patient, and may be the only thing that has induced her to consult a physician. If she has always been regular up to the time of the cessation, this sign becomes strong presumptive evidence, that needs corroboration, of course, before

being accepted as final. There are many conditions influencing this function, especially among so-called nervous women. Occurring soon after marriage or illicit intercourse, it may be due simply to emotional conditions. Again, it may be the result of exposure to cold, or debility from wasting disease. Some women have a "flow" during the whole or a part of their period of gestation. Again, the menses may be absent some months, as in the case of suckling women, some conceiving, bearing, and nursing several children in succession without an appearance of menstruation. In unmarried women little dependence can be placed upon their statements in that respect, as they invariably endeavor to deceive. Gooch says: "In these matters we must not believe a woman's word, but her belly."

Temperature Test.—The question of an early diagnosis of pregnancy by means of a temperature test of the vagina has been propounded, it being claimed that the vaginal temperature is one or more degrees higher than that of the mouth; but no satisfactory conclusion has been reached. One of the first results of conception we know to be a physiological congestion of the organs of gestation; and could the normal temperature of the vagina in each case be known, and all other determining influences excluded, it seems reasonable to believe that some light might be thrown upon this perplexing question of an early diagnosis.

Pulse Test; Jorissenne's Sign.—Graves formulated the law that in cardiac hypertrophy the radial pulsation remains constant in all positions of the body. In health there is a variation of from eight to ten beats per minute in radial pulsation, according to whether the body is upright or horizontal (Dalton). Jorissenne (*Arch. de Tocologie*, June, 1882), starting with the assumption that in pregnancy there exists a condition of hypertrophy of the heart, reasoned that there should consequently be no variation in the radial pulsation, whatever the position of the body; demonstrating its value by reporting cases in which its correctness was shown. Other observers have also found this sign of great value and of considerable accuracy. It is the simplest test known, and one that can be readily applied in every case without arousing any suspicion upon the part of the patient. Consequently, if reliable, it would be of

special value in cases where, for some reason, deception is likely to be practised, or where the physician may think it better not to request an examination of the person, as in the case of young girls and unmarried women.

One of the latest contributions to medical literature upon this subject is a paper of Dr. Llewellyn Elliot (*Journal American Medical Association*, June 22d, 1889), in which he reports eighteen cases in which pregnancy was diagnosed by the pulse test, all within three months and nine days of the first "missed period"; the diagnosis in each case being afterwards confirmed by delivery or abortion. In one-half (9) of these cases the diagnosis was made within ten days of the first "missed period"—*i.e.*, one within three days, two within four, two within five, two within seven, one within nine, and one within ten days. He says: "I place reliance upon the pulse test, Jorissen's sign, and have employed it for the past seven years in a great number of cases. There can be no possible objection raised to counting the pulse, and the result has removed all doubts in those cases in which I have employed it."

A sign so simple is apt to be ignored, and yet concerted action, with reports from a number of observers, would throw much light upon the value of this means of diagnosis. I requested the members of the Hartford Medical Society to assist me in testing the efficiency of this sign, by reporting to me the records of radial pulsation, standing, sitting, and lying, of pregnant or suspectedly pregnant cases at their command. The limited time given and the general feeling of distrust in the value of the sign resulted in a smaller number of cases being reported than had been hoped. The appended report (pages 454, 455) contains the observations of 46 examinations. In 14 cases there was no variation of pulsation in vertical and horizontal position greater than 5 beats per minute; 3 of these have since (February 15th, 1890) proved to be not pregnant, leaving 11 cases in which the sign may be considered positive—about 25 per cent. Of the remaining 32 cases, 11 have (February 15th, 1890) already been reported as miscarried or delivered, and there is little question but that the other 21 are pregnant. Elliot's 18 positive cases carry great weight respecting the efficiency of this test, and yet if the test

applies to but one-fourth of the cases known to be pregnant it can hardly be considered a valuable sign.

Nausea.—Sometimes before, yet usually not until after, the cessation of the menses is observed, the “morning sickness” appears, beginning about the first part of the second month, and usually disappearing as the uterus rises from the pelvis in the fourth month. This symptom varies greatly in different cases, being most marked in those of an exceedingly nervous temperament. In some cases it is almost entirely unnoticed, in others consisting of a simple nausea, most usual in the early morning on arising or attempting to arise, but often occurring at other times in the day or following the ingestion of food. The phenomenon becomes so perverse in some cases as, in the opinion of many of our best accoucheurs, to demand active interference to terminate the gestation.

Other Nervous Symptoms.—Due to reflex nervous excitation of the sympathetic system by the irritation of the uterine nerves, nausea is not the only symptom, but *ptyalism*, *perversions of appetite*, *change of disposition*, *disturbance of the bowel functions*—shown in constipation, diarrhea, and flatulence—*persistent toothache*, and other manifestations of nervous irritation, are often observed.

The Breasts.—Closely associated, sympathetically, with the uterus are the breasts, and they give evidence, early in gestation, of the irritation in the uterus, by the characteristic enlargement and hardening of the gland, turgescence and erection of the nipple, deepening in color and extent of the areola—most prominent in brunettes—dilatation of the superficial veins, and the prominence of the follicles within and about the areola, constituting a state of congestion which is seldom present unless coincident with uterine engorgement or inflammation, and imparting a sense of fulness usually attended by occasional pain of a tingling or lancinating character. In women who have never borne children these signs are considered of great importance, but especially so when milk and colostrum can be obtained from the breasts. This Montgomery considered to be a certain sign of pregnancy. Cases are recorded, however, of young girls, and even men, who have successfully wet-nursed infants, but such cases are rare exceptions and are interesting to us simply as curiosities. In mul-

REPORT OF PULSE TEST (JORISSENNE'S SIGN) IN THE DIAGNOSIS OF PREGNANCY.

No. of Case.	Name of Reporter.	Date of Examination.	Date of Last Menses.	Pulse.			Remarks.
				Standing.	Sitting.	Lying.	
*1	C. E. Froehlich.	November 4th, 1889.	Feb. 25th, 1889.	100	86	80	Ipara. Standing and sitting, pulse grew faster last half minute.
*2	" " "	" " 5th, 1889.	May 26th, 1889.	88	80	88	IIpara. Menses in March, then pregnant; menses again in May.
*3	" " "	" " 5th, 1889.	April 6th, 1889.	84	86	76	Multipara.
*4	" " "	" " 7th, 1889.	End of March, 1889.	90	82	78	Faster in beginning than later.
*5	" " "	" " 7th, 1889.	April 3d, 1889.	90	90	94	Ipara. Rather excited.
6	Geo. R. Shepherd	" " 6th, 1889.	July 2d, 1889.	86	80	78	Ipara.
7	" " "	" " 6th, 1889.	August 10th, 1889.	82	75	74	Ipara.
8	" " "	" " 7th, 1889.	January 30th, 1889.	78	76	70	IIpara.
*9	" " "	" " 1st, 1889.	February 1st, 1889.	76	75	75	IIIpara. Confined six hours later. Pulse never reached 80 during puerperium.
10	" " "	" " 8th, 1889.	August 2d, 1889.	86	86	80	Suspectedly pregnant for first time.
11	J. H. McNamara.	" " 4th, 1889.	January 20th, 1889.	72	69	69	Slight flow of blood May 8th, also August 3d and 4th. From her condition at present consider her in sixth or seventh month.
12	" " "	" " 5th, 1889.	April 6th, 1889.	96	90	84	There was a show May 6th, nothing since.
13	" " "	" " 8th, 1889.	May 16th, 1889.	84	78	80	
14	P. H. Ingalls,...	" " 13th, 1889.	February, 1889.	94	76	80	Patient insane.
15	" " "	" " 13th, 1889.	March, 1889.	86	86	86	
16	" " "	" " 13th, 1889.	February, 1889.	100	96	88	Hysterical.
17	" " "	" " 13th, 1889.	February, 1889.	120	112	90	
18	" " "	" " 13th, 1889.	March, 1889.	118	118	118	
19	D. Cary, Jr.	" " 3d, 1889.	September 16th, 1889.	96	86	84	
20	" " "	" " 3d, 1889.	September 25th, 1889.	102	96	92	
21	E. F. Parsons ..	" " 6th, 1889.	January 15th, 1889.	100	96	86	
22	" " "	" " 6th, 1889.	Jan. 20th—27th, 1889.	97	73	78	

23	E. F. Parsons...	November 5th, 1889.	April 1st, 1889.	66	64 Albuminuria.
24	" "	" 9th, 1889.	June 20th—27th, 1889.	120 106 96	
25	" "	" 9th, 1889.	Feb. 23d—28th, 1889.	102 99 90	
26	" "	" 11th, 1889.	May 20th—25th, 1889.	75 84 80	
27	" "	" 13th, 1889.	Feb. 12th—15th, 1889.	108 90 66	
28	" "	" 13th, 1889.	September 13th, 1889.	102 89 80	An unmarried woman, Had connection October 13th and October 20th. Morning sickness and irritability of stomach for two weeks.
29	S. R. Burnap....	" 13th, 1889.	March 15th, 1889.	87 82 77	
30	" "	" 15th, 1889.	September 15th, 1889.	75 72 70	
31	J. E. Root....	" 4th, 1889.	September 2d, 1889.	108 104 88	
32	" "	" 6th, 1889.	September, 1889.	100 108 80	
33	" "	" 14th, 1889.	August, 1889.	120 100 88	
34	" "	" 15th, 1889.	October, 1889.	120 112 108	
*35	M. M. Johnson..	" 4th, 1889.	June 23d, 1889.	115 103 109	
*36	" "	" 4th, 1889.	March 28th, 1889.	75 70 68	
*37	" "	" 16th, 1889.	February 15th, 1889.	100 80 90	Male.
*38	" "	" 16th, 1889.	April 3d, 1889.	88 76 88	Delivered October 5th.
*39	Gideon C. Segur	October 2d, 1889.	Dec. 24th—28th, 1888.	82 89 Ipara.	Nausea occurred August 17th to November 1st. Quickening occurred November 5th, 1889.
40	" "	November 16th, 1889.	Pregnant during lactation.	90 88 80	
41	" "	October 26th, 1889.	May, 1889.	100 100	
42	" "	{ Oct. 16th, 1889.	.....	{ 90 90	Although she has had bloody vaginal discharge, has also had many nervous phenomena which she thought due to pregnancy.
43	" "	{ Nov. 6th, 1889.	.....	{ 97 90	
44	O. C. Smith....	October, 1889.	Now nursing.	74 70	Baby five months old, and suspects pregnancy.
		November 5th, 1889.	August, 1889.	110 Ipara.	Suspectedly pregnant. Nausea November 12th, 1889.
*45	L. A. Davison....	November 5th, 1889.	July 31st, 1889.	98 84 76	
*46	" "	November 9th, 1889.	September 1st, 1889.	108 100 92	Miscarried four days later, November 13th, 1889.

Those marked * have been delivered at full term, or aborted, February 15th, 1890.

tiparæ the presence of milk, of course, is not of so much importance as a symptom, since it often happens that conception occurs during the period of nursing an infant; in such cases the suppression of the secretion may be the first sign that calls attention to the new gestation.

In the unmarried the changes in the breasts—an examination of which will be seldom denied, on account of the feeling of fulness and pain that has probably already called the patient's attention to them—are of much value, as confirming any suspicion of gestation, and afford ample reasons for making a thorough physical examination in order to determine the exact condition of the uterus and confirm or disprove the presumptive diagnosis.

Vaginal Examination.—The amount of secretion will usually be the first thing to attract attention; the mucous glands are excited to increased activity and bathe the parts with an exaggerated secretion, often so profuse as to cause considerable discomfort and to require the wearing of napkins.

Violet Tinge of Vaginal Mucous Membrane.—The vulva, and especially the vaginal mucous membrane, afford evidence of venous congestion, and often at a quite early date. First advanced by Jacquemin as a sign of pregnancy, much importance has been attached to it by many observers. One of the most recent contributions to the study of this sign was made by Chadwick, of Boston (Transactions of the American Gynecological Society, vol. ix.), who says: "The recognition of this peculiar localization of the blue tint on the anterior wall of the vagina" (just below the meatus urinarius) "as a sure sign of pregnancy, I feel is the most important new point in this communication." I find that I am inclined to place considerable reliance upon the presence or absence of this appearance, and to notice immediately, when viewing the vagina, the color of its walls, and although not ready to dignify it to the extent of regarding it as a positive sign, still to consider it as strong presumptive evidence of the pregnant condition—enough so, if seen in a case where pregnancy was not suspected, to induce me to search for its cause, and to believe it due to the pregnant state until proved to be from some other cause.

Inspection also shows the cervix in a state of congestion, often of a deep-red color, and bathed by the copious secretions

of the parts, the os often occluded by a tenacious mucous plug.

Digital Examination.—The uterus, increased in volume and weight, is tilted forward, and the cervix, softened and perhaps slightly enlarged, will be found high up posteriorly. Anterior to the cervix the body of the uterus, in the early stage of pregnancy, meets the exploring finger, and by conjoined manipulation its size and shape can usually be detected.

To overcome the resistance of the abdominal muscles so as to obtain a satisfactory bimanual examination seems sometimes almost impossible; but by distracting the patient's attention, gradual kneading, prolonged expiration, and changing from the dorsal to the lateral decubitus, it can, in most cases, be successfully accomplished, and the size and shape of the uterus, together with its relation to the other pelvic organs, ascertained. When the abdominal walls are lax, it seems, in some cases, as though the uterus could be taken in hand and examined about as critically as though not contained in the body, and its gradual enlargement during the early months of pregnancy carefully noted; but when the opposite condition exists, the thick and resistant abdominal walls hang as a heavy, impenetrable curtain between the examiner and the object of his search. In such cases the special value of the use of an anesthetic is demonstrated, a few whiffs of chloroform being sometimes all that is necessary to effect relaxation of the abdominal muscles and allow of a satisfactory examination.

Hegar's Sign.—Hegar demonstrated the fact that during the first few weeks (eight) of pregnancy the body of the uterus enlarges much more rapidly than the cervix; and, while the cervix remains of about the same size, the body grows, especially antero-posteriorly, and the examining finger meets this enlarged body sagging, as it were, about the cervix. It is to be appreciated as early as the sixth, and some claim to have been able to find it at the fourth week. Many claim it to be an infallible sign. This enlargement, being carefully differentiated from enlargement from any other condition, becomes an early and important indication of gestation.

Vesical Irritation.—The pressure on the urethra and base of the bladder by the anteverted uterus is often the cause of considerable vesical irritation, producing frequent and some-

times [painful micturition. This usually disappears as the uterus rises from the pelvis, to reappear during the last weeks of pregnancy, when the same conditions exist in an exaggerated degree. The frequency of vesical irritation in women makes this condition of little importance in the diagnosis of pregnancy. After the fourth month, when the fundus of the uterus has risen above the pubes, the abdominal evidences of a tumor can be discerned upon inspection, and other signs of pregnancy can be searched for. Among these may be mentioned the uterine souffle and slight shocks, attributable to movements of the fetus, which may be heard upon auscultation.

Uterine Souffle.—This sound consists of a thrilling or vibratory sensation, heard isochronous with the maternal pulse, but unaccompanied by any pulsation. It has been considered by some a certain sign of pregnancy, but may be appreciated in an enlarged uterus when pregnancy does not exist, as in uterine enlargement from fibroids (Charcot) and ovarian cysts (Gravdin); hence it must be classed among the signs needing confirmation.

Rhythmic Contractions of the Uterus; Hicks' Sign.—Closely following upon these, in the fifth month, appear the rhythmic contractions of the uterus, discernible, oftentimes, even earlier when the hand can be closely approximated to the uterus and retained in that position for any length of time. A symmetrically enlarged uterus undergoing these repeated muscular contractions—at intervals of five to twenty minutes and continuing from three to five minutes—is one of the earliest proofs of pregnancy (J. Braxton Hicks claims that it occurs throughout pregnancy), and by some is considered to be the most reliable of all the evidences of utero-gestation before the occurrence of the fetal heart sounds.

Quickening.—During the fifth month we may expect quickening to take place, which, to the mother, is the most convincing symptom of her condition. The movements of the child in utero begin in slight fluttering sensations, gradually increasing in force as the child increases in strength, until quite violent shocks are felt by the mother and the movements can be seen upon inspection of the abdomen. These movements are

sometimes simulated, in their earlier phases, by contractions of the abdominal muscles.

This sign is of importance in cases where pregnancy occurs during lactation when the menstrual function has not returned following childbirth, so that its cessation can be used as a starting point for reckoning the duration of pregnancy and the date of the expected confinement. Roughly estimated, it occurs about the middle of gestation, and yet cases are recorded of its being noticed as early as the twelfth week. As in its earliest manifestation it so nearly resembles the passage of gases in the intestines, and is entirely subjective, the statements of so early an appearance must be taken with considerable allowance, especially in the case of one who is exceedingly desirous of being pregnant.

Fetal Heart Sounds.—About the middle of the fourth month the fetal heart sounds may be appreciated, composed of two distinct sounds, the first being stronger and louder than the second, which is often almost imperceptible. These sounds can be readily differentiated from the maternal pulse, as the pulsations are much more rapid, averaging from 135 to 140, and ranging from 120 to 160, per minute. Fetal heart sounds are proof positive of pregnancy, and this sign is the only one, *per se* and in the absence of others, upon which a positive diagnosis can be based. Once found and substantiated by comparison with the maternal heart beat, there can no longer be any doubt upon the subject. Great care, however, is oftentimes required to find it, especially when the abdominal walls contain much adipose tissue, which does not serve as a ready medium for transmitting the sounds. Perfect quiet is essential, and repeated trials should be resorted to before denying its existence. It will be most readily appreciated immediately over that portion of the abdomen lying nearest to the fetal heart, which position varies with the position of the child, but may be sought midway between the umbilicus and the left antero-superior spine of the ilium, where it is most often found. Next in frequency is the corresponding location upon the right side; but if not found in either of these, a careful auscultation of the entire abdomen covering the gravid uterus will in time reward the patient searcher.

It is only when the abdominal walls are very thick, or the

fetus is misplaced or dead, that the heart sounds cannot be heard after the sixth month. They are sometimes masked by the placental murmur rarely absent in pregnancy.

Fetal heart sounds heard in two different places with equal intensity, and gradually decreasing through the intervening space, would be an indication of twin pregnancy, which would be confirmed by a difference in the number of the beats per minute, or by being heard by two observers at the same time. A stethoscope has been especially constructed for vaginal examination, and it is claimed that in some cases the fetal heart sounds have been appreciated in this way before the uterus was sufficiently enlarged to admit of abdominal examination.

Ballottement.—Up to the fifth month there is no fluctuation appreciable in the gravid uterus; it has the consistence of a glandular or fatty tumor. After the fifth month the sensation of displacement of fluids, allowing a hard body—the fetus—to be felt by ballottement, may be appreciated. Ballottement can sometimes be distinguished through the abdominal walls, but most readily and surely by placing a finger or fingers within the vagina and making quick pressure upon the uterus anterior to the cervix, when the sensation of a body displaced and returning to the same position is felt.

Ballottement proves only the presence of a *solid body* within a liquid medium; the detection of the fetal heart sounds is a positive assurance that the contained body is a living fetus. Ballottement may be simulated by a hard tumor floating in ascitic fluid, or by a large cyst containing internal projections, or a calculus in the bladder; when practised externally through the abdominal walls, such an error is more likely to occur than when the condition is appreciated by vaginal touch.

Fetal Movements.—During the later months of pregnancy the fetal movements can often be appreciated by inspection of the abdomen, and the outlines of the fetus can be traced upon manual examination. But if the walls are thick, some forms of ovarian tumors may closely resemble the shape of the fetus, especially if surrounded with ascitic fluid, or a mass of small cysts projecting into a large one may be moved very much like a fetus in liquor amnii; but independent move-

ments of the body under examination would be conclusive proof of a living child. These movements cannot always be felt even with a living child, and if the child is dead, most certainly not.

Misplaced or Extra-Uterine Fetation.—The skill of the most clever diagnostician is often required to determine pregnancy in cases where the ovum has become attached at other than the normal site. Misplaced fetations are fortunately comparatively infrequent. The most common point of attachment of errant ova is unknown; it is almost impossible during the life of the patient to determine the part of the genital tract in which the ovum is being developed. Hecker says abdominal situations are more common; Parry thinks tubal. Wherever they may be, distressing symptoms follow—hypogastric, colicky pains, vaginal hemorrhages with sometimes discharges of decidua, and the curious moral condition in which the patient declares herself enceinte. This diagnostic problem finds its solution most commonly in death, although the advances in abdominal surgery in the last few years have aided materially in making the diagnosis, by an exploratory incision in obscure cases, less dangerous through asepsis and a more perfect knowledge of procedure. If gestation is continued to the third or fourth month, it is probably abdominal, and the question of differential diagnosis will be settled by the usual signs of pregnancy—fetal movements, ballottement, heart sounds, etc.

At full term spurious labor with diminution of size will aid in deciding. If a process of encystment should occur, the resulting tumor may be either fluctuating or solid; in the former, ballottement, practised with the patient upon her hands and knees, may permit of the remains of the fetus being felt; in the latter the diagnosis must be made by exclusion and by the presence or absence of the characteristic signs of pregnancy during the early stages of its development.

Dr. Ernest Fraenkel (AMER. JOURN. OBSTET. SUP., 1882, page 338) claims that in all cases of extra-uterine pregnancy there is one constant symptom, *i.e.*, the formation and expulsion of a decidua out of an otherwise empty uterus.

Differential Diagnosis.—Ovarian tumors. The differential diagnosis between pregnancy and ovarian tumors has presented

problems that have been too intricate for solution by some of our very best diagnosticians; and some of our most skilful operators have been convinced of their error in diagnosis only when, having made an incision into the abdomen for the removal of an ovarian tumor, they have found a gravid uterus. A diagnosis of pregnancy at such a cost is dearly bought, and it is fortunate that few cases are so complex as to baffle conscientious searchers. Should any malformation of the generative organs seem to preclude the possibility of pregnancy, such condition would point towards a tumor of a different character; yet great care will here have to be exercised, since many cases are recorded where conception has occurred even when the vagina seemed to be entirely occluded or the parts so diseased, by cancer for instance, that impregnation and conception appeared to be impossible.

In a paper upon "Concealed Pregnancy," read before the Section of Obstetrics and Diseases of Women and Children of the American Medical Association, June, 1889, Dr. Albert Vander Veer has collated seventy-five cases in which abdominal section was performed for the removal of tumors in pregnant women, and in only seven of these was pregnancy suspected. This list contains the names of many of the best known operators of the world, and goes to show the difficulty attending the diagnosis of pregnancy when existing at the same time with other abdominal tumors.

In the case of ovarian tumors, the differential diagnosis at an early date is of little practical importance, since in either case there is nothing to be done but wait, and time will effect a solution of the problem. Ovarian tumors are usually of less rapid growth than the tumor of pregnancy, and there will hardly be a demand for active interference until all doubts respecting pregnancy are settled, if we consider the subject from the side of the treatment of ovarian tumors; but it may become of much greater importance when the subject of the diagnosis of the pregnant state is under consideration, so a few points may aid us in eliminating this element of doubt. With respect to age, an abdominal tumor occurring before the age of puberty or after the menopause would more likely be of ovarian origin.

A slightly tumefied ovary may be felt by vaginal, rectal, or

combined examination behind or at one side of the uterus, but it does not resemble the early pregnant uterus, and as it grows the independence of the two organs can usually be determined. It may crowd the uterus to one side, take it with it up out of the pelvis, or leave it behind in the normal position. If drawn upward the vagina becomes elongated, and no tumor can be felt through its walls; the os may just be reached high up above the pubes if the tumor is behind, or near the promontory of the sacrum if the cyst is in front. This condition simulates pregnancy, but a delay of a month or so should enable one to discern the true condition. An ovarian tumor may advance at about the same rate as a gravid uterus, but it is usually more irregular in growth, and often remains about the same size for some weeks or months, but fetal movements and heart sounds are wanting.

Spencer Wells says: "The size and position of the swelling and the duration of its growth, taken together, will influence the diagnosis." "Instead of the ordinary sympathetic disturbance of the functions, the health of the patient has materially given way." "More than the natural amount of pain." Superficial veins of abdomen are seldom so distended in pregnancy as in ovarian disease.

The principal points for differential diagnosis are :

1. Enlargement central in uterine tumor, more lateral in ovarian.
2. Enlargement of superficial veins, edema of abdominal walls, and lineæ albicantes more general in uterine, but not uncommon in ovarian of large size.
3. Ovarian conforms more to position of patient than uterine.
4. Measurement greater from pubes to sternum in uterine, greater on one side in ovarian.
5. Ovarian more fluid than uterine.
6. Ovarian can be more easily raised, and hands can sometimes be inserted between the pubes and tumor.
7. If there is free fluid in the abdominal cavity, its character will complete diagnosis.
8. Vascular murmurs the rule in uterine, rare in ovarian.
9. Fetal heart sounds present after third or fourth month in uterine (excepting when fetus is dead), absent in ovarian.

Moles or Hydatids.—In cases of uterine moles or hydatids the breasts may swell, catamenia cease, and other signs be present; but a molar pregnancy will usually terminate about the third or fourth month, though cases are recorded of thirteen and fourteen months' duration.

Churchill reported a case, unmarried, having frequent discharges of hydatids throughout her menstrual life.

In molar pregnancy the uterus does not enlarge so regularly, is more rapid in growth, and the functional disorders are more intense.

In Wells' case, a woman as large as at full term, with supposed ovarian tumor, was put under examination, when uterine contractions occurred and nearly a pailful of hydatids were expelled.

Phantom Tumors.—One may easily understand how tympanitic distention of the abdomen, which is not infrequently seen in hysterical women, may give rise to some awkward questions; but, except from personal observation or the testimony of men so accurate as Bright, Simpson, or Boivet, it is difficult to believe that any surgeon of reasonable experience or in his right senses could be so deluded by such a condition as to think that he had before him a case of solid ovarian tumor, and attempt the operation of ovariectomy; yet Simpson says that it has happened no less than six times.

The best means of differentiation in such cases is anesthesia. If the patient has a phantom tumor, it will disappear during the anesthesia, although it may, and usually does, return as soon as the effects of the anesthetic are over.

Polypus.—Intra-uterine polypi are often mistaken for pregnancy, and the dilatation and commencing expulsion supposed to be abortion or labor coming on. In these cases, however, the menstrual discharge is usually increased, and careful examination shows a marked increase of tumor at this period, and usually a decrease in size before the time for the next menstrual discharge.

The conditions of a distended bladder, fibroids, pelvic cellulitis, and abscess have been mistaken for pregnancy, but some of the characteristic signs may be wanting, and the greater discomfort and pain accompanying will aid in the differentiation.

Blood Changes.—In pregnancy the amount of blood is

increased; its specific gravity is diminished; its vital qualities are reduced, and excrementitious matters are increased.

Organs of Circulation.—There is increased arterial tension; hypertrophy of heart, left ventricle; more rapid pulsation; and the blood vessels, especially the superficial veins of pelvis, abdomen, and breast, show increased development.

Lymphatics.—The lymphatic glands, especially the thyroid and the lymph vessels, are enlarged.

Digestion.—The appetite is usually much increased and is quite apt to be capricious.

The action of the bowels is interfered with; peristalsis is diminished and constipation usually results.

The increased size and activity of the stomach glands cause an increased secretion, and large quantities of water accumulate in the stomach, to be thrown off by vomiting.

The Skin.—The changes in the skin consist in increased pigmentation of face, especially about the eyes, breasts, and abdomen. Sometimes the deposit of free pigment is to such an extent as to permit of its being wiped off (Barnes). The distention of the abdominal walls causes a separation of the less elastic layers of the skin covering them, which produces the pink striae which, after delivery, become permanent in the lineæ albicantes.

Flesh, Weight.—Pregnant women lose fat; this is especially shown in the face, and when there is much vomiting and disturbance of digestion the loss of weight is most manifest. The deficiency in food is compensated for by the absorption of fat. In a healthy woman the cessation of the menses, accompanied by the loss of flesh, would be an indication of pregnancy. When married women quickly grow fat there is a strong probability of their being sterile.

Respiration in pregnancy is impeded, especially during the later months, increasing till delivery.

Kidney and Urinary Signs.—The signs referable to the kidneys, which are usually hyperemic and frequently congested, consist of frequent and copious micturition from increased blood pressure, and especially frequent, early and late, from mechanical disturbance.

Glycosuria occurs in one-half the cases of pregnant women (Blot). The reaction is acid, chlorides are increased, while

the solids—*phosphates, sulphates, urea, uric acid, creatin, and creatinin*—are diminished.

Kyestein is always present from the second to the eighth month, but, as it is also present in other conditions, its presence is not sufficient in itself to base a diagnosis upon. Albumin is often present, not necessarily pathologically, but indicating at least a condition upon the border between physiology and pathology. Its escape may indicate a relief from arterial tension, or it may be due to blood exudation into some portion of the urinary tract. Barnes says: "The appearance of unusual ingredients—glucose, albumin—should warn to thorough examination of all organs and functions with a view to clinical action."

Conclusion.—As yet we have no sign upon which we can place reliance before the cessation of the menses. The non-appearance of that function at its regular time, attended by nausea and vomiting and other reflex nervous phenomena; supersecretion of vaginal mucus; a violet tinge of the vaginal mucous membrane; mammary changes incident to pregnancy; especially increase in size of the uterus as described by Hegar—one or more, would be strong presumptive evidence; and if to these could be added the fact of sexual intercourse occurring near the time of the last menstruation, we should have little if any doubt respecting the diagnosis. If, however, the different presumptive signs should be so hidden or imperfectly developed as to raise any doubt upon the question, it would seem to be the path of wisdom and prudence to decline committing one's self until the fetal heart sounds or the rhythmical contractions of the symmetrically enlarged uterus can be determined.

A Case Simulating Pregnancy.—Mrs. M., age 32, married four months to second husband; was a widow for seven years; lived with first husband eight years, by whom she had two children, both now living, aged 15 and 19 years. Had several miscarriages between the births of her two children, and one miscarriage since her last labor.

Menses.—Always regular in occurrence, continuing for from five to six days, with but little pain. Was last "unwell" April 28th, one month ago.

Complaints of severe backache below the waist at times, especially during the past two months; bearing-down pains, and

pain in left ilio-inguinal region, and "neuralgic" pain in left leg; vesical irritation, being obliged to pass water very frequently. Has frequent headaches and some leucorrhœa.

Bowels regular, but there is a general tendency to constipation.

Personal Appearance.—Short, slight, dark complexion, apparently nervous temperament.

Physical Examination.—Perineum almost entirely gone. Uterus low (prolapsed 1°), cervix lacerated bilaterally; marked retroflexion of the body; left ovary prolapsed and inflamed, being exceedingly sensitive.

Treatment.—Local applications of iodine and iodide of potassium solution, with glycerin tampons. Directed to use hot-water vaginal douches night and morning in recumbent position. Nerve sedatives and tonics were prescribed.

Menstruation occurred as usual in May, but none in June or July. In August the menses appeared again, but earlier in the month than usual. The amount was slight, yet continued so long as to give much annoyance, and ergot was prescribed, which had the desired effect.

During July complained of nausea, which continued through August, September, October, and November, in each of which months there was a slight discharge at the menstrual period. In September she drew attention to her abdomen, which she said was enlarging, and she thought she felt as during previous pregnancies; but an examination failed to disclose any change indicating gestation. The pelvic inflammation having in great measure subsided, a retroversion pessary was introduced and a gradual improvement of symptoms followed. During October and November she was seen less frequently and appeared to be improving. Early in December she began to complain of "a swelling in the stomach," which she said was increasing in size, and that her breasts were enlarging, while she had shooting pains through them. An examination at this time disclosed a nearly symmetrical enlargement of the abdomen, and beginning just below the free border of the ribs upon the left side, and extending downward about eight inches, and from the left axillary line forward to just beyond the median line, was an area that emitted a very dull percussion note, and within which an indistinct wave, suggestive of fluid contents, could be appreciated; while over the remainder of the abdomen tympanites was most pronounced, and the abdominal walls were so tense as to make a bimanual examination fruitless. The vaginal examination failed to disclose any appreciable change in the pelvic organs. It was then determined to make an examination under anesthesia, in order to determine the nature of the tumor, and an appointment was made for the following day.

Reaching the patient's residence before the arrival of the other physicians, I employed the time in inquiring more fully into the environments of the case, and learned that her present husband, to whom she had been married for nearly a year, was desirous of having children, and that this desire she would be most willing to gratify, and felt very sure that she was now "in the family way," as she had felt life several times. When carrying her children before she had exactly the same feelings which she now experienced. She "always carried her womb high up" and had some shortness of breath. When questioned about her menses, she said that in both of her previous pregnancies, carried to full term, she menstruated regularly up to the eighth month, and that her father's sister, who had borne a large family, had always done the same.

These facts tended to throw some doubt upon the diagnosis that she was not pregnant. Then the question arose, What, if not the retroverted uterus, occupies the posterior cul-de-sac? I may here say that, owing to the suspected condition, the uterine probe or sound had not been used. Before giving the anesthetic the contour of the abdomen was observed by the physicians present through the light covering worn by the patient, she being in the upright position, and the abdomen presented the same characteristics as upon the day previous. The anesthetic was given, and, after passing through a stage of considerable excitement, the patient came fully under its influence, when a most complete and thorough examination was easily obtained, the lax abdominal walls permitting a careful search, which failed, however, to discover any tumor whatsoever. The uterus was easily mapped out by conjoined manipulation, and before discontinuing the anesthetic a sound was introduced into the retroverted uterus and it was readily returned to its normal position.

After recovery from the anesthetic the patient was much disturbed when told that she was not "in the family way," and greatly lamented the fact, since she had been much annoyed by her husband, who blamed her on account of not becoming pregnant, and claimed that he was the laughing-stock of his fellows because of it. She begged that he should not be told of it, as she had assured him that she was pregnant and she feared abuse from him should the truth be known. It was further learned that the husband, strong and vigorous, was very passionate, and she was obliged to submit to his embraces almost without cessation, which, together with the existing laceration of the perineum, soon resulted in his becoming dissatisfied with natural connection and resorting to buggery. Since she had informed him of her pregnancy and had been wearing a pessary, however, she had been afforded

the first relief since her marriage, and, as she expressed it, she "would rather die than have him know she was not pregnant and thus raise the barrier to his former excesses." So she still kept her tumor and he his belief in her pregnancy. As the uterus is now in a more natural position and the patient but 32 years of age, it is hoped that conception may take place before her husband is undeceived, and the "tumor," which returned after the anesthesia, may be replaced by one formed by a gravid uterus, and family happiness follow.

One point of interest in this case is the established fact of a family idiosyncrasy to a vaginal discharge, simulating menstruation, during gestation, which is by no means of common occurrence.

The principal point to be deduced from the case is the value of anesthesia in doubtful cases of abdominal enlargement simulating pregnancy. Many a case that baffles the diagnostic skill of our best endeavors, when the ordinary means of examination prove futile, will, after a few whiffs of ether, be most readily appreciated and the doubtful problem offer its own solution.

A SECOND CASE OF LAPARATOMY FOR INTESTINAL OBSTRUCTION FOLLOWING VAGINAL HYSTERECTOMY.¹

BY
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In a paper on this subject, read before this Society last October, I stated that if I met with another case of intestinal obstruction "I would operate early or not at all." Unfortunately a similar case *did* present itself seven months after the first, and I followed exactly the course upon which I had previously determined, though with no better success than before. So far as I have been able to learn, this is the tenth case on record, my first being the seventh. The following is the history:

Mrs. F., æt. 39, was admitted to my service at the New York Cancer Hospital on January 19th, 1890, through the courtesy

¹ Read at a meeting of the New York Obstetrical Society held February 18th, 1890.

of Dr. H. Marion Sims. She had had one early miscarriage. Since June she had noticed a gradual decline in strength, associated with slight, irregular uterine hemorrhages, but she had never had any severe pain. Towards the end of December she had a profuse flooding, which continued until a few days before entrance. She was then examined for the first time by Dr. Walser, of Staten Island, who recognized the presence of epithelioma of the cervix uteri. On entrance she was in fair condition, and a vaginal examination showed extensive disease of the portio vaginalis involving the posterior vaginal wall. The uterus was movable and the broad ligaments were apparently not invaded. The uterus was extirpated four days later, the operation, which was completed in fifty-five minutes, being somewhat difficult on account of the rigidity of the perineum and the narrowness of the vagina and introitus. It was impossible on this account to apply ligatures, so that the broad ligaments and bleeding points were caught with clamps, seven or eight pairs being used. Great care was taken to prevent septic material from entering the cavity. The right ovary and tube were removed, but the left were adherent and were not disturbed, as there was general oozing and the patient was weak. Though there was only moderate loss of blood, she had considerable shock. The opening was carefully plugged with iodoform gauze, the gauze being pushed up higher than usual in order to prevent prolapse of the intestine, a loop of gut having appeared in the wound just after the uterus was removed. The patient had more pain than usual after the operation, her temperature rising during the night to 101.6° , while her pulse did not exceed 106. She did not vomit after the first few hours. The following day her condition was excellent. The forceps caused so much pain that I removed them at the end of twenty-four hours (instead of leaving them in for thirty-six, as is my usual custom), but took the precaution not to disturb the gauze which plugged the opening. The wound was draining satisfactorily. The evening of the same day the temperature rose to 101° , but the pulse was only 102 and the patient was free from pain, her abdomen being flat and not sensitive on pressure. She retained nourishment. During the second day she was free from pain, retained all that was given to her, and her temperature did not rise above 99° . It began to rise in the evening, reaching 101.2° at 10 o'clock, while her pulse was 140. Her abdomen became much distended. Rochelle salt was administered, followed by a high enema, which brought away a quantity of gas and some scybala from the large intestine. The tampon was removed from the vagina and a careful search was made for pockets of pus, but the drainage was good. The next morning (the third

after the operation) the temperature was 99.6° , and was still lower at noon, but the pulse was still over 100. Several doses of salt were given, followed by high enemata, without results. The patient had vomited but once. At 6 P.M. the temperature was 101° , but the abdomen was flat, not tender, and the patient vomited but seldom. Two hours later she vomited a quantity of fluid having a distinct fecal odor. The temperature was 100.2° . I was sent for, and at once decided to perform laparotomy. She was in very fair condition, and I could attribute her symptoms to no complication except adhesion of the intestine to the edge of the wound, with consequent obstruction, as in the former case which I reported. Previous to opening the abdomen, with the patient under chloroform, I passed my fingers into the vagina and could just touch a coil of small intestine, but could not decide whether it was adherent or not. No time was lost in the laparotomy, as the patient was returned to her bed in about twenty-five minutes after being placed on the table. Two or three coils of ileum were adherent to the edges of the peritoneal wound; these were easily detached, and at the same time a quantity of flatus escaped per rectum. There were no indications of peritonitis, and the edges of the wound felt healthy. Other intestinal adhesions were sought for in the general cavity, but none could be found. The cavity was thoroughly irrigated, and free drainage was established into the vagina. The patient could not bear the shock of this comparatively slight manipulation, and died fourteen hours later, her temperature remaining below 100° . A partial autopsy showed that the principal point of obstruction had been at the lower eighteen inches of the ileum. The small intestine was generally collapsed, the large being moderately distended. There were evidences of commencing peritonitis. The condition of the edges of the vaginal wound did not suggest septic infection.

Without wishing to discuss the points on which I have already touched in the former report, I would propose several questions which have presented themselves to me, viz.:

1. Does the occurrence of two cases of intestinal obstruction in rapid succession indicate some serious defect in the technique of the operation?

2. Is there any certain way of avoiding this complication?

3. Is there any way in which the obstruction can be overcome without opening the abdomen?

4. Why is the secondary operation invariably fatal, when laparotomy for primary obstruction is sometimes successful under more unfavorable circumstances?

In reply to the first question I would say that I followed the usual course pursued at the Cancer Hospital, securing the broad ligaments with clamps instead of ligatures; in fact, the narrowness of the vagina prevented the use of the latter. The attachment of the peritoneum to the edge of the vaginal wound would also have been impracticable for lack of working space. Finally, there was no special difficulty about the operation. In both of my fatal cases extirpation of the uterus was really easier than in any of the others, and the reports of other cases quoted in my former paper show the same fact. I am positive that no septic material was allowed to enter the peritoneal cavity. A loop of intestine was seen in the wound just as the uterus was removed, but it did not become prolapsed and was readily pushed up with a sponge. In order that prolapse might not occur subsequently, the iodoform gauze was pushed up into the opening higher than usual. In short, in reviewing the operation I am unable to say what precaution was omitted for the prevention of an accident which previous experience had taught me to fear. I would add that I feared I might have nipped a loop of gut with the forceps, but the autopsy disproved this.

How shall we avoid this complication? I confess that I cannot suggest any sure plan so long as we are obliged to open the peritoneal cavity. Doubtless the danger is reduced to a minimum by suturing the peritoneum to the edge of the vaginal wound, and still more so by entirely closing the peritoneal cavity. But in seven out of the ten reported cases the former plan was adopted, and there are circumstances under which it is impossible to do this—as in the present instance, where the vagina was small and the working space was still further limited by the presence of several pairs of forceps. Complete closure of the cavity by suture of the peritoneum is a method which offers several advantages. Fritsch has practised it successfully, and I intend to adopt this method in future, if there is enough room and if it is not important to finish the operation in the shortest possible time. But this cannot be done when several pairs of forceps are used, so that we must either employ ligatures alone, or apply clamps only to the lower portions of the broad ligaments, securing the upper portions with ligatures. In spite of the fact that the

clamps have been used successfully in hundreds of cases, I believe that they are not as safe as ligatures, for the reasons before stated. Entire closure of the peritoneum of course prevents drainage of the cavity; but if the stumps of the broad ligaments are brought down and attached to the edge of the vaginal wound, there ought to be no danger of sepsis, since the sloughing tissues will then be entirely extraperitoneal, and there will remain within the pelvic cavity no raw surface to which a loop of intestine might become adherent.

Is there any way in which an adherent loop of gut can be freed without opening the abdomen? It is extremely doubtful. After the adhesion has once formed, I doubt if free catharsis would separate it—at least we have no positive proof that this ever occurs. Again, we cannot reach per vaginam high enough to clearly recognize and free the adherent gut. Moreover, there is considerable risk of displacing either ligatures or clots, thus occasioning dangerous hemorrhage, or of introducing septic material into the cavity from the sloughing vaginal wound. At the time when the obstruction is recognized the peritoneal wound has usually closed and must be re-opened.

It may be fairly assumed that intestinal obstruction following vaginal hysterectomy is a fatal complication, and that, although it is our plain duty to give the patient the benefit of a secondary operation, her chance of surviving it is an extremely small one. In the case which I have reported, the obstruction was recognized at least three days earlier than in any of the nine others, and there was not an hour's delay in the operation, which was completed rapidly and with a minimum of disturbance of the abdominal viscera. The patient was in far better condition than the average; in fact, many cases of suppurative peritonitis, intestinal obstruction, and ruptured extra-uterine pregnancy have recovered under far more unfavorable conditions. There is something in the condition of the patient after vaginal hysterectomy which renders intestinal obstruction especially fatal. I recall a case in which I assisted a gentleman to open the abdomen thirty-two hours after he had performed vaginal hysterectomy, in order to remove a sponge which had slipped from the holder, yet the patient recovered easily. I do not pretend to explain

why the complication occurs, or why surgeons have been so invariably unsuccessful in their attempts to overcome the obstruction by the only scientific method—abdominal section.

PUERPERAL RHEUMATISM :

BY

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Mrs. C., white, age 22 years, was taken in labor December 25th, 1888, with her first child. I was called to see her early in the morning, and found that dilatation was progressing satisfactorily. The only symptom which seemed unusual was the character of the pain. As soon as contractions began the lady gave evidence of such extreme suffering in the uterus that I deemed it necessary to administer ether, in small quantities, at an early stage of the labor. I was at a loss to account for this symptom until the patient commenced to complain of pain in the arms when she made traction, and on inquiry I learned that during the last two months of gestation she had experienced a great deal of pain in the upper extremities, which was so great at night, on many occasions, as to compel her to walk the floor for hours at a time before she secured relief. There was a history of other symptoms of rheumatism during the period named, but I had no knowledge of the matter until labor was progressing. The information given satisfied me that the patient was really suffering from rheumatism of the uterus, and on that hypothesis I explained the peculiar manifestation of pain when contractions began. The pain referred to seemed to interfere with the advance of the child, and, after waiting until complete dilatation of the os had taken place, ether was administered to complete anesthesia, and, assisted by Dr. H. M. Smith, labor was easily terminated by the forceps.

Sore nipples troubled the patient considerably and required the use of a shield; but, with that exception, the case was uneventful until Sunday, December 30th. I had visited the patient in the morning and found everything progressing well. There was no distention of the breasts; no pain; lochial dis-

¹ Read before the Washington Obstetrical and Gynecological Society, November 15th, 1889.

charge free from odor and of normal quantity; kidneys acting well; bowels regular. In the afternoon the brother of Mrs. C. called at my office and showed me a bottle containing not less than four ounces of what appeared to be pure blood. On inquiry he informed me that the woman who was nursing the lady had come in shortly after my visit and insisted that a breast pump must be used or a "gathered breast" would result. Acting under instructions, the pump was forcibly used, with the result of drawing from the nipple the bloody fluid which had been shown me, and which was found to be almost pure blood. This had doubtless come from the excoriated surface of the nipples.

December 31st.—On making my visit in the morning, the patient was found to be suffering from rheumatism in the *right* elbow. There was intense pain, attended by great swelling and redness, and the parts looked as if an abscess was forming. These symptoms had been preceded by chill and fever. There was nothing to indicate that the trouble was referable to the uterus, as examination per vaginam showed that involution was going on well; there was nothing abnormal in the quality or quantity of the lochial discharge; and there was entire absence of tenderness over the abdomen. Lead and opium lotion was applied to the elbow, and salicylate of sodium and anodynes were administered internally. Under this treatment the acute symptoms subsided.

Monday, January 7th, 1889.—Severe attack of pleurodynia, followed next day by chill, fever, and sweating, and these latter symptoms recurred on Wednesday and Thursday. On Thursday morning the temperature was normal and the pulse 72. In the evening there were chill, fever, and excessive sweating, as mentioned above.

Friday, January 11th.—Morning: Rheumatism in the *left* knee. Great swelling and fever were present. Gave salicylate of sodium, fifteen grains, and deodorated tincture of opium, fifteen drops, every three hours. Evening: Temperature normal, pulse 72. Sweating. Ordered quinine sulph., ten grains at bedtime.

January 12th.—Had pain in the knee during the night. Chill at 9:30 A.M. At 11 A.M. temperature 103.2° , pulse 102. Swelling in knee, but no redness. Salicylate of sodium and laudanum every four hours. Liniment to knee. Six P.M.: Sweating. Pulse 72, temperature 98.6° .

January 13th.—Morning: Pulse 72, temperature normal. Evening: Chill.

January 14th.—Morning: Pulse and temperature normal. Ordered tinct. guaiac. Four P.M.: Chill, fever, sweating.

January 15th.—Morning: Pulse 96, temperature 100.5° .

Ordered tinct. ferri chloridi, one-half drachm every four hours. Evening : No decided chill. Less sweating.

January 16th.—Morning : Less swelling in knee. Left wrist affected. Pulse 72, temperature normal. Continue iron, and in addition sodii salicylat., ten grains every four hours. Tincture of iodine to the knee.

January 17th.—Morning : Pulse 96, temperature 101°. No chill yesterday, but pain in the knee and sweating during the night.

January 18th.—Much pain in the knee. Pulse 90, temperature 101°. Morph. sulph., one-quarter grain, and sodii salicylat., twenty grains, every four hours.

January 19th.—Knee better. Pulse 90, temperature 100°.

January 20th.—Pulse 100, temperature 101°.

January 21st.—Pulse 100, temperature 102°. Potas. bicarb., twenty grains ; tinct. hyoseyami, one-half drachm ; tinct. belladonnæ, eight drops, every four hours. Knee better.

January 22d.—Pulse 100, temperature 102°. Slept well. Only slight sweating. Continue treatment.

January 23d.—Pulse 100, temperature 102°. Pain in shoulders. Knee better.

January 24th.—Morning : Sharp stitch in right side. Pain in shoulders. Pulse 120, temperature 106°. Sodii salicylat., twenty grains every two hours. Evening : Better. Pulse 100, temperature 100°.

January 25th.—Morning : Pulse 120, temperature 104°. Evening : Dr. Lovejoy in consultation. Sweating. Large râles in right lung. Friction sounds.

R Potas Iodid.....	3 ij.
Ammon. Carb.....	3 i.
Tinc. Opii Deod.....	3 i.
Vini. Colchici Sem.....	3 iiij.
Aquam	ad 5 iiij.

M. S. A dessertspoonful every four hours.

Blister to right side.

January 26th.—Morning : Pulse 120, temperature 104°. Less pain in side. Constipation. Ordered calomel and Rochelle salt.

January 27th.—Patient died.

When the swelling began in the right elbow, it looked as if an abscess would speedily form, and, further, that it was of septic origin. But a careful examination failed to elicit any source that might establish that view. There was no rupture of perineum or cervix, no unhealthy lochia, no tender uterus or abdomen. The existence of rheumatic symptoms previous to confinement seemed to justify the diagnosis of rheumatism. And this position was strengthened when the symptoms subsided under the use of salicylate of sodium. When the knee

became affected, the symptoms entirely left the elbow and the lady was able to hold her child on the arm which had been affected. The knee became enormously swollen, but as the case progressed the swelling diminished, until the knee was left in a state approximating complete ankylosis. In none of the joints did pus form. When pleurisy developed, the patient was, of course, much reduced by the preceding illness, and could not throw off the new infection. Good nourishment and stimulants were freely administered during the whole period of the patient's illness. Sleep was sometimes induced by chloral. Antiseptic vaginal injections were used from the beginning. Only the details believed to be essential are mentioned above.

I am able to eliminate syphilis, gonorrhea, and leucorrhea as causative agents in this case. This statement is made to obviate the necessity of making a differential diagnosis in which these several diseases would have to be considered.

It is necessary to state the grounds upon which the diagnosis of puerperal rheumatism was made in this case. Some will even say that no such disease as that named exists, and assert that septicemia and pyemia are the true affections which are present where the diagnosis of rheumatism has been made. It is only necessary to answer this criticism by saying that a sufficient number of eminent men have placed cases on record and have not hesitated to call them puerperal rheumatism.

There was rheumatism antedating the confinement, and it was of the subacute form so generally noted by those who have described the disease. After delivery it reappeared and presented the usual symptoms of rheumatism—successive invasion of the joints, chill, fever, sweating. The subsidence of symptoms in one joint on the appearance of the disease in another is a point insisted upon by many authorities as being an evidence of rheumatic trouble; and this fugacious character of the phenomena present in my case is worthy of special note.

The disappearance of the initial symptoms under the use of salicylate of sodium might justify some in confirming the correctness of the diagnosis. I am not willing, however, to admit the reliability of the test. In the muscular form of puerperal rheumatism, Hirst (*"Amer. System of Obstetrics,"* vol. ii., page 520) says: "If the disease affect the uterine muscle and is associated with much fever, the only

means, practically, of distinguishing between this affection and puerperal infection with septic inflammation of the uterus, is the therapeutic test—the administration of salicylate of sodium.” He cites the case of a patient who had an irregular fever during pregnancy, with general pains and aches. Salicylate of sodium was given with immediate effect. After delivery the woman developed fever, with abdominal pain and uterine tenderness, which yielded to the same remedy after intra-uterine douches and quinine had failed. And yet, in the treatment of the articular form of the disease, the same writer says (page 521): “General medication is of little use. Salicylate of sodium is of no value.” In this latter statement he is sustained by Celles (Paris thesis, 1885), who says “the salicylate of sodium ought to be abandoned.” The remedy was certainly of little benefit in the later stages of my case. It would perhaps place the remedy on its true therapeutic footing if we say it is useful in the inuscular form of puerperal rheumatism, but not in the articular. Its utility as a diagnostic agent would thus be circumscribed.

As time and space will not permit me to detail the symptoms present in cases of the articular form of puerperal rheumatism, I will adopt the following brief presentation of the phenomena from Charpentier, as being the clearest and best which has been met. He says: “The characteristic of these cases is their tendency to suppuration. The joint symptoms, appearing from the second or third to the tenth or fifteenth day after confinement, are generally accompanied by a claret red, a blue, or a pale rose color, disappearing on pressure, to soon return. The swelling, unlike that observed during pregnancy, is generally slight, although the effusion be more abundant. The pain is excruciating. The pulse is very rapid, from 110 to 132 per minute. The temperature usually keeps pace with the pulse, rising to 104° or even 106° F. Chills are frequent and recurrent.”

Conceding the fact that some of the symptoms present in my case are similar to those met with in septic conditions—both dependent on and independent of the puerperal state—it is also to be stated as a fact that we are generally able to trace the sepsis to its point of origin. Still, Hirst has written: “The

diagnosis between septic arthritis and simple acute rheumatism is not always easy."

Garrigues ("Amer. Syst. Obst.," vol. ii., page 325), discussing the subject of "Arthritis," says: "As a rule, only one or few (joints) are affected, although many may be so from the first; but the disease does not jump from one point to another, as does inflammatory rheumatism." And further on he says: "Diagnosis—The fixity and the tendency to suppuration, besides the concomitant disturbances, distinguish puerperal arthritis from common rheumatism and gonorrhœic arthritis."

In my patient no focus of septic infection could be discovered, and I have been fortunate enough to find a case recorded which much resembles mine, but which was reported to prove the reality of metastasis of rheumatism to the peritoneum. The reporter, Dr. Alsdorf, gave the following history (AM. JOUR. OBSTET., 1887, vol. xx., page 1032): On the third day after confinement, rheumatism commenced in the joint of the left knee, attended by the ordinary symptoms of acute rheumatism. The right knee, then the left elbow, became affected, and these were followed by the right elbow and wrist. "For a period of ten days the inflammation continued, with no indications of puerperal complications. The lochia remained normal both in quantity and quality; the abdomen free from pain or tenderness on pressure; and tympanites absent." "Twelve days after confinement the following symptoms were noted: Diffused abdominal pain and tenderness, increased by movement; vomiting; tympanites; thoracic respiration only; and a very rapid pulse (140). The above symptoms, in connection with the distention of the abdomen and the characteristic posture of the patient (lying on the back, with the thighs and knees flexed, and the legs drawn up), left no doubt as to the diagnosis, and that the case had developed a well-marked peritonitis." In consultation with two physicians, it was decided that the woman was suffering from a "true metastasis of acute articular rheumatism" to the peritoneum. The termination of the case was not stated, but one of the consultants, Dr. Burke, returning to the subject (*Med. Rec.*, New York, January 12th, 1889, page 56), says the woman died a day or two after he saw her. Hirst is rather sceptical about accept-

ing the diagnosis in Alsdorf's case, but the judgment of the three qualified physicians in attendance seems worthy of indorsement.

Reference was made, in the history of my case, to the peculiar character of the pain experienced when uterine contractions occurred, and the opinion was expressed that rheumatism of the uterus was the cause thereof. This is an old explanation of some anomalous manifestations during labor. Chailly wrote: "Rheumatism of the uterus is produced by the same causes as rheumatism of other parts. But persons affected with general rheumatism are more predisposed to it than others. It often arises from a rheumatismal metastasis." Similar testimony is given by others and is further illustrated by Hirst's case cited above.

While puerperal rheumatism is of rare occurrence, it may be interesting to note the fact that the disease has been the theme for an unusually large number of Paris theses.

PLACENTA PREVIA, ITS CAUSES, DIAGNOSIS, AND TREATMENT; WITH THREE CASES, ALL MOTHERS AND TWO CHILDREN SAVED.¹

BY

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PLACENTA previa is that condition in which the placenta is abnormally implanted into the lower segment of the uterus, involving the cervix wholly or in part only. When the placenta covers a portion or part of the *cavum cervicis uteri*, there is placenta previa partialis or lateralis; whilst if the whole circumference of the cervix is involved the implantation is a "placenta previa centralis" or "totalis." In central implantation, the placenta is generally also very adherent to the sub-

¹ Read before the Brainard Medical Society, March 4th, 1890.

jacent uterine tissues. Rigby's "unavoidable hemorrhage" is frequently applied synonymously to placenta previa. Partial implantation is infinitely less dangerous to both mother and child than central implantation; in the latter case the fetus is invariably lost and the mother in great danger of death by flooding. In "lateralis," there may be little if any danger from hemorrhage during pregnancy, and labor, even, may be practically normal. In "central implantation," the danger of hemorrhage is a standing menace from the period the lower uterine segment begins to develop, increases with the advancing gestation, and reaches its climax during the first active labor pains.

Placenta previa was first described by Paul Portal in 1685; six of his cases were "central implantations" and were adherent throughout. Five years later (in 1690) Frau Sigmundin, a midwife to the court of Brandenburg, advised "puncture of the membranes"; and nearly a century later Wenzel invented a stylet with a silver canula to draw off the liquor amnii. About the same time Bunsen recommended partial separation of the abnormally situated placenta, and Puzos taught how to dilate the os uteri gradually and intermittently with the fingers to induce labor pains. Trinichetti suggested total separation of the placenta in severe hemorrhage, to check the loss of blood (Milan, 1817, *Bibliot. Ital.*, tom. v., No. xlv., February); and Sir J. Y. Simpson applied it to, and executed the suggestion in, placenta previa. In 1761 podalic version was applied by Levret; and in 1776 another Frenchman, Leroux, introduced the tampon, while Moreau peeled a lemon and used it for a tampon. Wiegand, of Hamburg, became the warm defender of the tampon in 1808, since which period the tampon is universally applied and used by the obstetrician in divers modifications, as the colpeurynter, water bags, tents of various substances, etc.

Various views have been enumerated as probable causes of placenta previa. An arrested abortion may produce "previa" if the dislodged ovum find a resting place in the inferior uterine segment near the internal os. Placental implantation anywhere in the lower segment of the womb is abnormal—placenta previa. Sawyer's theory of rotation of the ovum during the first few weeks of pregnancy may become a fruitful cause of

previa in one of its forms (AM. JOUR. OBSTET., 1889, page 1077). According to Reamy, coitus postponed to the fifteenth or sixteenth day *post menses* is liable to be followed by previa if pregnancy result (AM. JOUR. OBSTET., 1889, page 543). Hofmeier theorizes that placenta previa is placenta developed within the decidua reflexa of the inferior pole of the ovum, whose most frequent cause is corporeal endometritis. This theory appears to have been demonstrated by Kaltenbach in a case of carcinoma of the cervix involving a womb in the fourth month of gestation (*Centralbl. f. Gynäköl.*, No. 40, 1889). The underlying pathological conditions producing leucorrhea, etc., alter the uterine mucosa, destroy its texture, and, instead of the velvety covering, the internal surface of the uterine body is coated with glairy mucus or muco-pus, which hinders the impregnated ovum from getting a nest in the upper uterine zone; hence it falls or migrates downward, and is either lost or causes a previa. A similar result may be caused from flabby uterine walls (Siebold), enlarged cavum uteri; and age and hereditary predisposition (Kleinwächter) are also charged with contributing to the genesis of previa. I know of a family in whom the grandmother, mother, and two daughters had placenta previa, and each of them suffered severe flooding. In young primiparæ previa is relatively rare, but becomes more common as they advance in years. The largest number and greatest percentage are furnished by multiparæ. In Lauer's collection of 136 cases of previa, 60 per cent of the women had been pregnant five or more times, while only 8 per cent were among the primiparæ. Longaker's case of previa in two consecutive pregnancies (AM. JOUR. OBSTET., vol. xxii., 639) is eclipsed by Fitzpatrick's patient, who had previa in five successive gestations (*Lancet*, 14; *Le Bulletin Médical*, 1889, page 1510).

In 16,414 cases of labor Collins found placenta previa 11 times—that is, 1 in every 1,310 accouchements. There were 46,000 cases of labor in Berlin in one year, and according to Lauer 65 of them were previa—that is, 1:723. Kleinwächter estimates the frequency at 1:800 or 1,000, but other authorities give a much smaller ratio.

Aside from the danger of hemorrhage in the later months, previa may be the causal factor of an abortion (Hofmann,

“Gerichtliche Medizin”), in the earlier months of pregnancy, from interplacental hemorrhage, or from fatty or calcareous placental degeneration (King, Longaker, and others).

In labor, premature or at term, there may be, and often is, serious interference to the parturient function from prolapse of the funis, from too short a cord; and, especially in negro women, from intramural fibroids (Brown, *AM. JOUR. OBSTET.*, vol. x., 39; Morris, l. c., xix., 312), from myoma¹ (Chadwick), from carcinoma (Kleinwächter), from laceration or fissure of the cervix (Leopold), from great distention of the womb; or contraction of the fundus uteri may seriously check or abolish the force of the labor pains (Olshausen); and twins, especially if there be only one placenta, are complications that may jeopardize the mother's life. There may be a serious obstacle to labor in central implantation of the placenta, as in Mundé's case, in which the placenta centralis was an impediment, although it was minus a cord, the cord being attached to a second placenta situated on the left side above the cervix (*AM. JOUR. OBSTET.*, vol. xv., 629 et seq.). The placenta may be spread or expanded over the entire ovum (Bartlett, l. c., xix., 851), or the placentæ in twin pregnancy may be fused (Hofmeier, l. c., xxi., 1104; in the specimen the twins were not separated by membranes, the fetuses were surrounded with blood), not only offering obstructions to labor, but inclining to hemorrhage at the same time. In totalis, with general adhesions of the placenta, hemorrhage will be very severe (Morrill, l. c., xx., 619). In twins with double placenta, the hemorrhage may become severe, and one or both may die (Hanks, l. c., xviii., 948). Hydrocephalus would require puncture of the child's cranium to remove the fluid and collapse the skull; and in spina bifida complicating placenta previa, Mackinnon tore through the coverings of the cyst and delivered the fetus (l. c., xxi., 707).

The many sudden deaths in labor with placenta previa have, I believe, been generally attributed to the results following severe hemorrhages, but it appears that the possibility of the entrance of air into the sinuses of the uterus by aspiration has been wholly ignored. The literature being very scanty on the

¹ Hickinbotham also reports a case of previa complicated by a large myoma, upon which the placenta was attached. Perforation, sepsis, recovery (*AM. JOUR. OBSTET.*, xiv., 908).

subject, I have been able to find only two cases—Kramer's and Vavra's—in the references at my command. In Kramer's case of placenta previa centralis, turning had just been completed; a uterine contraction and contraction of the abdominal muscles followed; the patient collapsed and died. "Post-mortem examination revealed the right heart distended with air; in the deeper layers of the decidua the open mouths of veins were seen, through which air had entered. No air was present in the uterine veins; that which entered when the uterine and abdominal contraction relaxed and the blood pressure in the abdominal veins became negative had passed at once into the heart" (*Am. Jour. Med. Sci.*, vol. xvi., 319; *Zeitschr. f. Geburtsh.*, Band 14, Heft 2). In Vavra's case of placenta previa (*Centralbl. f. Gyn.*, 1, 1890), the hemorrhage, postpartum, necessitated tamponnade of the uterine cavity, for which iodoform gauze was used. Only a few strips were inserted when cyanosis suddenly came on, respiration ceased, and death followed. The autopsy disclosed air in the veins of the broad ligaments, in both internal spermatic veins, in the inferior vena cava, in the right side of the heart, and in the pulmonary artery. Anemia and pulmonary edema were present (*Am. Jour. Med. Sci.*, 1890, p. 430). We must not forget that air embolism is not an unknown quantity in various surgical conditions, and in parturition in placenta previa the abnormally placed placenta offers an aspiratory tendency which is very remote indeed in normal pregnancy and normal labor.

Hemorrhage may be frequent and alarming, or gestation may progress normally. In lateralis, hemorrhage may be the exception; but the nearer the abnormally situated placenta approaches a centralis or totalis, the greater the danger of hemorrhage, as a rule. So long as the upper segments of the uterus increase in dimensions (Barnes) the danger of flooding is small; but once the cervix begins to develop, it grows more rapidly than the placenta—in fact, grows away from it, to prepare for the parturient function; the placenta in previa is outstripped in growth, and hemorrhage results (Jaquemier). The source of the hemorrhage is laceration of the utero-placental vessels (Hamilton), from the uterine side (Mackenzie), during uterine contractions (Barnes). Matthews Duncan considers this hemorrhage as accidental during the period of gestation,

and as unavoidable when labor has commenced. When the cervix is only partly covered by the placenta, the uninvolved portion may dilate sufficiently to permit passage of the fetus without hemorrhage (Scanzoni); this is, of course, impossible in placenta previa centralis. Duncan estimates the limit of the spontaneous detaching area at 4.5 inches, and Barnes at 6 inches in diameter—sufficiently large to permit birth, or at least extraction. If the placenta becomes separated and is expelled before the child is born, all hemorrhage ceases (Simpson).

In the early months of pregnancy hemorrhage may be caused by fright, fatigue, or excitement; one of the principal causes is perhaps excessive coitus (King and others). Excessive lifting, injuries of various kinds, and even severe straining at stool may induce flooding. At term, excessively strong membranes, the delayed evacuation of the amniotic fluid, a short funis, may directly produce hemorrhage; and the abuse of oxytocics has caused hemorrhage in placenta previa.

During the first six months of gestation hemorrhage is not so apt to occur as after. When the lower uterine segment takes on rapid growth, the low-down placenta is a formidable menace and an ever-increasing danger as pregnancy approaches its close. Labor begun, the hemorrhage is most severe during the pains, and subsides somewhat in their intervals. Death may be sudden. A single gush, in the hemorrhage of previa, may collapse or exsanguinate the patient.

In the early months of pregnancy a diagnosis of placenta previa is almost impossible. The first warning is a hemorrhage. This hemorrhage comes unexpectedly, may be much or little, and may recur at longer or shorter intervals. However, this bleeding must not be confounded with a flow which recurs monthly in some instances, lasts from a few hours to a week, and is, apparently, a menstrual anomaly during the course of gestation. I have observed ten such cases in fourteen years. There was no abnormality in any case, the placenta was not in the lower segment in any one of them, pregnancy was normal in all, and labor was normal in each. The occasional oozing from the softened cervical mucosa should not be confounded with the hemorrhage from previa. In the former case the "show" will be very light, while in the

latter there will be considerable loss of blood. Varicose veins of the vagina may suddenly burst and thus simulate the hemorrhage of previa.¹ Fatigue and excitement rarely induce hemorrhage in normal pregnancy, and frequently cause flooding in previa.

Ballottement is useless in placenta previa (Gendrin). The cervix may be very long (three inches in Galabin's case) and rigid (*Med. News*, January, 1877). The location of the placental bruit will leave no doubt in the examiner's mind; it may be discovered by using a long, curved wooden stethoscope in the vagina, as suggested by Wallace and ridiculed (?) by Verardini. The auscultation of the abdomen will aid the diagnosis by exclusion, or by absence of the usual sounds in the upper uterine zones.

The belly is said to be less prominent in previa than in normal pregnancy. The head of the fetus is higher up. In thin persons palpation will reveal absence of the placenta in the upper and middle uterine zones (Meigs). Spencer made a diagnosis of previa in seven cases by external palpation of the abdomen; the diagnosis was subsequently verified (*Trans. London Obstet.*, vol. 31, 1889). Palpation is not difficult, but is useless in very fleshy abdominal walls. No anesthetic is required. The examination must be made in absence of pains; it must be gentle; it may be prolonged or repeated. The patient should lie flat on her back; bladder and rectum must be empty, the abdominal muscles relaxed. When the placenta lies in front of the head, it feels like a spongy or boggy mass between the examining fingers and skull. Its edge feels like the segment of a circle, within which touch is obscured. On the outside of the edge the child's parts can be easily distin-

¹ Benington (*Medical Press*) reports that a woman was subject to sudden, unaccountable hemorrhages, simulating the flooding of placenta previa, in a number of successive pregnancies. On examination of the vaginal tube, the veins were found to be very large and prominent, projecting into the vagina—in other words, they were varicose. Shortly after the examination the patient was taken with a violent hemorrhage. On another and immediate examination the appearances were changed: the veins collapsed, and one of them was ruptured. This rare variety of hemorrhage is mentioned by very few authors (*Le Bulletin Médical*, 1890, page 65). It is highly probable that many of the so-called menstrual periods during pregnancy are derived from the same source.

guished. Impulses to the head are not clearly felt through the placenta, but beyond its area they are distinctly propagated.

Intravaginal examination will reveal an elongated cervix with thickened and softened walls, imparting a spongy sensation to the examining fingers; and if the external os is somewhat patent, the boggy placenta, with its uneven surface and pulsating vessels, may be distinguished. If there was a previous hemorrhage, the coagula present will readily break down under the pressure exerted by the fingers, but the placenta cannot be so impressed.

Extrusion of the placenta before birth of the child is by no means impossible. In one of my cases it was born more than three hours in advance of the child. Barlow, Baudelocque, Chapman, Collins, Merriman, Osiander, Perfect had each one case; La Motte, Lee, Smellie reported 3 cases each; the elder Ramsbotham had 5 cases; Sir J. Y. Simpson collected 141 authentic cases of this kind. The placenta may be born in advance of the child's body, either a few minutes or many hours (eighteen hours in Collins' case). The fetus is, of course, always still-born.

In central implantation, strong pains may force the head through the central portion of the placenta—Portal's twentieth observation. Three pains drove the head through the placenta in White's case; and Inglesby made a similar discovery in an autopsy on a woman dead from hemorrhage in labor.

In partial implantation mother and child fare infinitely better than in central implantation. In *centralis* the child is invariably dead when born, and the danger to the mother from hemorrhage is very great, especially if she be anemic.¹ Simpson collected 399 cases of placenta previa, of which 134 were fatal, 1:3. In Reade's statistics of 512 cases of turning, 131 died, 1:4. In King's 240 cases with a mothers' mortality of 50, the percentage is 22.50, or 1:5; the children's mortality is 135, or 57.20 per cent (*AM. JOUR. OBSTET.*, vol. xiii., 743 et seq.).

¹ In Loviot's case of placenta *centralis* in an anemic multipara, version and extraction were done, and the placenta removed without hemorrhage; but the uterine inertia continued, and, although no further bleeding became manifest, death resulted from exhaustion. Stimulation failed. There were no indications of thrombosis (*Bull. de la Soc. Obstét. de Paris*, 7, 1889; also an abstract in *Am. Jour. Med. Sci.*, March, 1890).

Churchill's estimate is 1:3; Barnes' is 1:10.4. In Lomer's collection of 178 cases treated by prompt delivery, the mortality is only 4.5 per cent for the mothers.¹ Le Page saved all of his 21 cases by prompt artificial separation of the placenta from the lower uterine zone. Obermann treated 15 cases in private practice by version and slow extraction, using the child as a tampon; all recovered.² He objects to the expectant method, and to prove his assertion presents the following figures from Credé's clinic: 64 cases of previa, of which 7 mothers and 34 children perished. These 64 cases were divided into two groups: First group, 49 cases (one of which was moribund when brought to the hospital) were delivered by combined version and slow extraction, with a mothers' mortality of 2.1 per cent and a fetal death rate of 62.5 per cent, or 30 children. Second group, 15 cases, not delivered the same way, gave a mothers' mortality of 5, or 33.33 per cent; children's death rate 4, or 26.6 per cent. In the first group, 17 of the 48 children were born before the seventh month, hence were very immature; leaving these out, their mortality is 42 per cent. On the other hand, Nordmann leans toward expectancy, and bases his conclusions on data derived from Leopold's clinic: 45 cases, divided into three groups, as follows: First, 15 cases treated by colpeurynter and spontaneous delivery; all mothers saved, and children's mortality is 16.6 per cent. Second, 23 cases, foot brought down and child immediately extracted; 4 mothers died, or 17.3 per cent, and the children's mortality is only 5.8 per cent. Third, 6 cases, version; a foot being brought down, the case was left to Nature or subsequent extraction; two mothers and all children perished. In induced premature labor, the mothers' mortality, according to Byford, is only 1 death in 53 or 54 cases, and two-thirds of the children may be saved.

Some of the first questions that demand an immediate answer at the first visit to a case of previa are: Will this hemorrhage be dangerous to the patient? Will it be a continuous

¹ Lomer's tables contain Hofmeier's 37 cases with one death; Behm's 40 cases, no deaths; his own 101 cases with 7 deaths, or 178 cases with 8 deaths, or a mortality of 4.5 per cent. His paper appeared in the *AM. JOUR. OBSTET.* some years ago, and is worth a careful perusal.

² The statistics of Obermann from Credé's clinic in Leipzig are in abstract in the *AM. JOUR. OBSTET.*, vol. xxi., page 780; Nordmann's figures from Leopold's Dresden clinic will be found on the same page.

menace and jeopardize her life? Shall gestation continue in its course? or shall labor be induced prematurely (Greenhalgh) in this case; and if so, shall *accouchement forcé* be practised (as first suggested by Guillemeau)?

When the hemorrhage is slight or infrequent, an effort should be made to overcome the danger and guide the patient safely through until the end of pregnancy. Quietude, the horizontal position on the back, simple but easily digested and nourishing food, easy stools and unconstrained micturition, are among the first essentials in the treatment of the dangers of placenta previa. Excitement, fatigue, and exposure must be avoided. Cold drinks acidulated with dilute phosphoric, hydrochloric, plain or aromatic sulphuric acid, made into a lemonade with sugar and water, will be useful to allay thirst and check hemorrhage. The juice of both lemon and lime may be allowed in lemonades. Grapes and fruits may be allowed *ad libitum*. Nuts must be interdicted. When required, exhibit opium *pro re nata* to quiet irritation, and ergot in small doses (Dubois), or some other oxytoxic, to check hemorrhage.¹ The cinchona salts are useful only in malarial intoxication. Very cold compresses applied to the lower portion of the abdomen quickly stopped the hemorrhage in one of my cases. The hands immersed in very hot water almost instantly checked the hemorrhage in one of Baudelocque's cases. Sinapisms to the back (Velpeau), cups applied above or below the nipples, between the shoulders, or over the loins, have been useful in checking hemorrhage. Electricity, both faradic and galvanic, has been successfully employed to check bleeding. If anemia result from the hemorrhage, wine and analeptics will be in order. Plenty of good beefsteak, served to suit the patient's taste, is frequently more valuable to restore the waning vitality than drugs. Some of my patients have eaten from two to four pounds daily for weeks at a time, with the most satisfactory results. Milk and eggs are very useful. But anything in the line of foods that cause flatulence or constipation must be excluded from the diet. Coffee and tea should be sparingly used, and if they cause nervousness, inter-

¹ Petresco accords *Bryonia alba* hemostatic powers equal to ergot or hamamelis, and prefers to use its most energetic glucoside, "bréine" (Jour. Méd. de Paris, 1890, page 21).

dicted. Cocoa and chocolate may be allowed in moderate quantities.

If ordinary means fail to control the hemorrhage, tamponing may be resorted to. But in all operations or manipulations that may be necessary, two short but very important rules should be rigidly adhered to and carried out: first, avoid shock; second, be absolutely clean and aseptic.

A vaginal tampon alone will be of very limited use; cervical tamponnade is essentially necessary to check hemorrhage and induce labor pains. Quickly dilating substances are necessary. Sponge tents must be used with care. Barnes' series of dilators are easily applied or placed in position, and then distended with hot or cold water, etc., thus checking hemorrhage and dilating the os at the same time. Metallic dilators are worse than useless in placenta previa. Dexterity and gentleness are required in the manipulations to avoid eclamptic spasms and prevent unnecessary injury to the cervix. If the cervix is fissured or the seat of an old laceration, the utmost care will be necessary to prevent rupture of the womb in very low placental implantation.

The vaginal tampon may be constructed from cotton, jute, tow, wool, or strips of gauze, and may be charged with antiseptics, alum, or tannin. Vinegar, recommended more than a century ago, and lately so highly extolled by Goodell, is a powerful hemostatic that served me well in one of my cases twelve years ago. Instead of the vaginal tampon, large rubber bags may be used, distended with hot, cold, or ice water. Ice, or ice and salt mixed, will check hemorrhage by the cold produced. Hot or cold water injected into the vagina or thrown against the os will increase the pains and cause contraction of the blood vessels. In severe or continued bleeding, ice-bags placed on the abdomen above the pubes will materially aid the tamponnade in stopping the hemorrhage.

Let it be understood here that two lives are at stake; that the child's depends on the least disturbance of the placental circulation; and that the mother's hangs in the balance, by a hair, as it were. Her danger from hemorrhage is great. Save both, if possible, but the greatest effort must be made to save the mother.

If hemorrhage be severe, or alarming, or uncontrollable,

labor must be induced at once artificially. If pains have manifested themselves, the liquor amnii should be drawn off by passing a tube or catheter through the placenta or between it and the cervix; the membranes may be ruptured also, and the fingers used *à la Puzos* to increase the force of the pains and dilate the os sufficiently to effect delivery. The separation of the placenta in centralis has led to convulsions in artificial dilatation of the os (Hinton, *Med. and Surg. Reporter*, vol. xxxv., 457); hence all needless irritation should be avoided. Remember, in totalis there is no time to lose!

If the os is dilated or dilatable, and there is no hemorrhage, let labor take its course, but be prepared for emergencies. If urgency be demanded, follow Tyler Smith's advice—to turn is the operation in placenta previa. If the placenta is in the way, peel up a portion of it to get room for seizing and bringing down the feet (Barnes). Do not pass the hand through the placenta, because it increases the hemorrhage; the danger of flooding must be repressed, not encouraged. If the oozing continues and uterine contractions are feeble, the contents of the uterus may be pressed down to check the hemorrhage (Burge, N. Y. *Med. Jour.*) and improve the pains. The child's body is a living tampon that will check all hemorrhage so long as it compresses the bleeding surfaces, without endangering the maternal parts by irritation or by septic infection.

In the following conditions the placenta should be separated and delivered before the child is born: first, in severe or excessive hemorrhage when the fetus is not yet viable or is dead; second, in exhausting hemorrhage when the os is insufficiently dilated; third, when the liquor amnii is evacuated and fails to expedite labor; fourth, in contracted pelvis; fifth, when the uterus is too firmly contracted to permit version; sixth, in exhaustion of the mother (Simpson, "Select Obstetric Works"; "Encyc. Sci. and Art of Obstetrics").

If, after birth of the child, the placenta is removed, and hemorrhage persists because the uterus does not contract, or contracts imperfectly, and the usual methods have failed to induce healthy action, introduce a sponge saturated with dilute acetic acid or vinegar into the cavum uteri, and knead the uterine walls between the hand in its cavity and the

other hand externally, to produce contractions of the womb. Duehrssen alludes to seventy-nine cases of puerperal bleeding of great severity in which the uterus was tamponed with iodoform gauze, and the hemorrhage was promptly checked. Not a case was lost. The hemorrhage should be controlled, however, before the patient is exsanguinated, by prompt tamponade of the uterine cavity (*Berliner Klin. Wochenschrift*, No. 44, 1889). Invert the patient, *i.e.*, let her lie on the back, with the head lower than the pelvis; for, according to certain natural laws, water cannot flow up hill, neither can blood. If the preceding measures fail to stop the hemorrhage, there is one left that will be successful—compression of the abdominal aorta. My friend Dr. N. Semm has applied it for twenty years with satisfactory results. La Torre and Misrachi have both successfully treated the hemorrhage of placenta previa with remarkable results by compressing the aorta abdominalis (*Nouvelles Archives d'Obstétrique et de Gynécologie*, Avril et Octobre, 1889).

In threatening heart failure from the loss of blood, diffusible stimulants, such as ether, musk, amyl nitrite, aromatic spirits of ammonia, alcohol, whiskey, etc., may be exhibited internally, but the best and most certain way is to inject them under the skin. Caffeine is a powerful stimulant to both heart and brain (Coppola, *La Medicina Contemporanea*, 1886). This remedy may be employed hypodermatically in doses of one, two, or three grains. Finally, injections of saline solution deep into the tissues, or infused into the veins,¹ may be tried with a hope of success. These saline solutions are easily prepared and used anywhere, at any time or place, and do not require experts or trained assistants. The following is Mieucliez' saline solution:

Sodii Chlor.	6
Sod. Bicarb.	1
Aq. destil.	1,000

M. S. Inject from one to three pints at a temperature of 100° F.

Infusion of defibrinated blood may be resorted to, but is not

¹ Harrington courageously saved his patient, in whom an ante-partum separation of the placenta had caused an almost fatal hemorrhage, by infusing sixty-six ounces of saline solution (*AM. JOUR. OBSTETRICS*, xix., 553; *Boston Medical and Surgical Journal*).

without danger, and direct blood transfusion is mentioned only to be condemned as impracticable and dangerous.

My own experience with placenta previa is limited to three cases. In one of them the awful gush of blood frightened me, but by quick work I saved both mother and child. In one case, a *centralis*, the expulsion of the placenta hours before birth of the child in all probability saved the mother from fatal hemorrhage, with very little to spare. One of the cases was very puzzling at first and annoying afterward. They are briefly told as follows:

I. This was a *IIpara*. She was in charge of a midwife. When I arrived the floor and bedding were saturated with blood. The patient was in collapse, bloodless, and appeared to be dead. The heart action was very feeble indeed. The placenta lay between the thighs of the parturienta, and had been born more than three hours, I was told. The hemorrhage had ceased altogether. There were no pains whatever. The head was too high up for forceps delivery. In the relaxed condition of the patient version was easily done. The manipulations produced no pains whatever, and delivery was not difficult. The child, a female, weighed six and one-half pounds. It was a "*centralis*." The mother rallied and made a slow but perfect recovery. She subsequently had two normal pregnancies, and the children were both born alive in normal labor.

II. This was a *IIIpara*. The first indication of the presence of placenta previa was a severe hemorrhage, following previous excitement, in the seventh month of pregnancy. It was a "*partialis*," involving about two-fifths of the cervix on the left side and posteriorly. The hemorrhage was checked by quietude on the back in an exaggerated horizontal position. The diet consisted of nourishing and easily assimilable food. The second hemorrhage, in the beginning of the ninth month, was severe but brief in duration. The treatment was ergot and opium in small doses, acidulated drinks, and an inverted position in which the patient was kept on her back for three days. The hemorrhage stopped and the patient went to term without further mishap. Labor was practically normal; the hemorrhage during active labor pains was very light. Both mother and child well a year later.

III. This was a *primipara*. The first six months of pregnancy presented each a flow of blood lasting from two to three days, seeming to be an ordinary, painless menstrual period. Nothing was done to stop the flow. In the seventh month the hemor-

rhage became very severe, but was checked by cold applications to the abdomen, acid drinks, and quiet in the inverted position. The diet was plain, nutritious, and easily digestible. The bowels were kept soluble. Fatigue, excitement, and labor were interdicted. The eighth and nine months were repetitions of the seventh. The implantation was a right lateral, involving about one-half of the cervix. The patient went to term. The first active labor pains started the hemorrhage.¹ The uninvolved portion of the cervix—the os externum—was soft, and, with the assistance of my fingers *à la Puzos*, the dilatation was soon sufficiently large to permit me to apply my long Hodge forceps to the head at the brim and deliver quickly. A frightful gush of blood followed the child's body. The placenta was quickly separated and removed, and the clots turned out of the non-contracting womb. A sponge saturated with vinegar was introduced into the uterine cavity to check the hemorrhage, which, combined with friction and kneading of the relaxed uterine walls, soon brought on powerful contractions and cessation of the hemorrhage. Both mother and child were saved.

Bibliography.—In addition to the quotations in the text, the following works were also referred to in preparing this paper: "Real Encyclopaedie der Gesammten Heilkunde"; "Reference Handbook of the Medical Sciences"; "Wenzel, Kuenstliche Fruehgeburt," 1818; the obstetric works of Cazeaux, Siebold, Meigs, Miller, King, Parvin, etc.

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March 3d, 1890.

¹ The fluid extract of *Cimicifuga racemosa*, in doses of five to eight drops twice or thrice daily, during the latter months of pregnancy, may perhaps diminish the tendency to hemorrhage during the active pains by relaxing the muscular fibres of the uterus (and vagina), and diminish or suppress the cramp-like pains so often observed in the irregular dilatation of the os uteri externum in placenta previa. Snyder-Kurse has a very sensible article on this subject in *Journal Méd. de Paris*, 1890, page 21, of which an abstract is given in *Journal de Méd., de Chirug. et de Pharmacol.*, Jan. 20th, 1890.

VULVAR OR VAGINAL HEMORRHAGE IN THE NEWLY-BORN.¹

BY

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HEMORRHAGES from the genital organs in newly born female children may be classified into three varieties. One, and probably the most frequent, is characterized by periodical recurrence and the usual outward phenomena of premature puberty. Such cases are recognized and described as examples of precocious menstruation. A second form is distinguished from precocious menstruation by the irregular recurrence of the hemorrhage for a brief period, not extending beyond the twelfth or eighteenth month, and the total absence of any of the usual accompaniments of puberty, such as growth of hair upon the pubes and in the axillæ, and changes in the breasts. The third variety occurs during the puerperal month, with rare exception not later than the twenty-first day, but most frequently between birth and the sixth day of life; and usually subsides spontaneously in a few days, without detriment to the infant. It does not recur, and is not associated with any of the signs of puberty. This form is known as vulvar or vaginal hemorrhage, of which the case hereinafter reported is an example.

Peuch² divides hemorrhages from the genital organs of female children into two groups—hemorrhages in children at the breast, and in the newly-born. In the first group he includes pseudo-menstruation or periodical metrorrhagias, which he thinks are not incompatible with health, and hemorrhages symptomatic of divers lesions, which are more or less dangerous and fatal, according to the primary condition. The second group he limits to "hemorrhages which appear by the vulva during the first eight days following birth," which he believes are entirely distinct from those which appear later. He differs

¹ Read before the Washington Obstetrical and Gynecological Society, November 1st, 1889.

² Obst. Jour. G. B. and I., vol. vii., page 395.

from other observers in limiting this group to those cases in which the hemorrhage appears within the first eight days of life. In other respects he concurs in the consensus of opinion of observers in regarding this group as entirely distinct from other forms of genital hemorrhage in the newly-born.

The terms vulvar and vaginal are probably misnomers. As yet no one has discovered any bleeding point or surface on the vulva. Bouchut¹ heads the chapter in his work on diseases of children with the title of "Vulvar Hemorrhage," but in the context refers to the womb and vagina as organs which are "sometimes the seat of hemorrhage which has been incorrectly regarded as a very precocious menstruation." Underwood² refers to the subject as a sanguinolent discharge from the vagina. Vogel³ describes it as a vaginal hemorrhage. Pench assured himself that the blood did not come from the vulva, by sponging the genitals with tepid water and afterwards seeing it issue more or less quickly from the posterior border of the hymeneal fissure. Cullingworth⁴ believes it "to be well established that the bleeding does not take place from the external generative organs," and accepts the observations of Billard, which favor the "presumption that the lining membrane of the uterine cavity is the real source of the discharge." Billard⁵ refers to the autopsies of "two children that died a few days after birth," in which he found "blood effused and clotted in the cavity of the uterus." In Muller's case a clot of blood was discovered behind the hymen. These observations, and anatomical and physiological considerations which relate to the nature, structure, and lesser resistance of the endometrium to blood pressure, and greater vascularity of the uterine body, point to the mucous lining of its cavity as the locality of the hemorrhage. Blood pressure is relatively greater against the uterine than against the vaginal mucous membrane in the event of any determination of blood to the internal genitalia. Menstrual blood escapes through a surface lined with cylindrical epithelium.

¹ Page 552, transl. by Bird.

² "Diseases of Children," eighth edition, page 545.

³ "Diseases of Children," page 471.

⁴ Liverpool and Manchester Med. and Surg. Reports, page 46, 4, 1876.

⁵ "Diseases of Infants," transl., page 497.

The meagre literature of the subject establishes the infrequency and perhaps harmlessness of this variety of hemorrhage in the newly-born. For notwithstanding several cases were reported in the latter half of the seventeenth century, and one as early as 1642, but few of the standard authors on the maladies of infants, and fewer obstetricians, have even referred to it. Peuch in 1873 collected 30 cases, 6 of which occurred in his own practice; and Cullingworth in 1876 tabulated 32 cases of "hemorrhage from the genital organs in the recently born female child," of which 7 must be excluded from this class of hemorrhages because of recurrence of the bleeding, either regularly or irregularly, after the expiration of the puerperal month. Since these publications quite a number of cases have been reported. Both of these authors, as did Billard and Ollivier of Angiers before them, intimate that it has been far more frequent than the number of reported cases would indicate.

In 1874¹ I reported the first case that had come under my observation. The hemorrhage began on the morning of the fifth day, and ceased spontaneously during the afternoon of the ninth, thus lasting four and one-half days. The infant had been perfectly well from its birth, and presented no other symptom of disease or suffering at the time. The mother insisted that it was premature, but I failed to discover any circumstance verifying that opinion except its probable undersize. She had been in feeble health, suffering from debility, anemia, and occasional attacks of intermittent fever.

My second case occurred during the present year, and is reported in detail as follows:

Madam ——— was delivered of her first child at 1:20 A.M., May 23d, 1889. The duration of her pregnancy was estimated at two hundred and ninety-one days. Her health previously and during her pregnancy had been excellent. Labor began at 5:30 P.M., 22d. The pains from the beginning till 11:30 were continuous, with rapidly recurring exacerbations, resembling in character and continuity the pains following the use of ergot. At 9:30 the os was dilated to about the size of a silver dollar. The head presented in l. o. a. position. There was no formation of a bag of waters. During the succeeding two hours the pains continued as before described. At 11:30

¹ AMER. JOUR. OBSTET., vol. vi., page 46.

the head, during the acme of the pains, pressed against the perineum, and the administration of chloroform was begun. Very soon thereafter the pains assumed their usual paroxysmal character, and continuously increased in force until the child was born, at 1:20 A.M. the 23d. During the period of narcosis—one hour and fifty minutes—the patient at times seemed conscious of suffering, but after recovery from the anesthesia she declared she had not felt any pain during the entire period, and was totally unconscious of the birth of the child for some minutes afterwards. The narcosis had been maintained at the degree of complete unconsciousness to slow the labor and save the perineum, but failed to accomplish either. During the final and terrific contraction the child was forced completely out, inflicting the worst laceration I ever encountered in my own practice.

The child was born with the funis coiled around its neck, and asphyxiated. The congestion was so profound that the cord was cut before ligation, but not a drop of blood escaped. After several ineffectual efforts it was finally resuscitated by Schultze's method. Relapse occurred, and a second resuscitation by the same method followed. The cord was then tied, and the child was wrapped in a warm blanket and carefully watched for one and one-half hours before being dressed, during which time whiskey, in three-drop doses with water, was given several times. The mixture of whiskey and water was continued at intervals of two hours during the first twenty-four hours. Afterwards a solution of condensed milk, in the proportion of one part to eighteen parts of water, was substituted for the water until the mother could supply milk. It continued too feeble to nurse, so that the milk was pumped from the breast and fed regularly with the whiskey to the child until the morning of the fifth day, when the hemorrhage was first observed. The child measured twenty-one inches in length and weighed six and one-half pounds.

Upon removing the napkin at the time stated, the nurse discovered in the vulva a clot of blood which she represented was as large as a hazelnut. Upon its removal the blood continued to flow, and an hour later, when I saw the child, another clot occupied the locality. It was also removed, and the blood continued to ooze slowly but continuously. I directed the nurse to drip into the vulva a solution of alum from a small pledget of absorbent cotton, and then to place the pledget in the vulva and press it gently towards the hymen. The method of feeding as before described was continued, and the quantity of whiskey was increased to four drops every two hours. At my afternoon visit there was no abatement of the hemorrhage, and the almost inaudible whine of the pulseless infant convinced me that some more decisive treatment was necessary

or death was inevitable. In addition to what was being done, I ordered two drops of the fluid extract of *Hydrastis canadensis* to be given in water every four hours. It was continued until the morning of the seventh day—thirty-six hours—when it was discontinued, the hemorrhage having ceased. During the following night there was slight recurrence of hemorrhage, and the *hydrastis* was resumed and continued for several days. There was no sign of bleeding after the morning of the ninth day, and during the afternoon of that day the radial pulse could be felt for the first time since the birth of the child. With careful nursing and proper feeding it continued to improve. Now, October 1st, it weighs twelve and one-half pounds.

In this case the hemorrhage occurred in a small and feeble infant, born asphyxiated, with the funis coiled around its neck, which was resuscitated, after prolonged efforts, by Schultze's method. These circumstances, together with the eccentric character of the uterine contractions—being continuous during the first and explosive during the second stage of labor—may offer data which will establish the relation of cause and effect.

Our knowledge of the causation of this class of hemorrhages is purely speculative. The condition of the mother during pregnancy, and character of the labor, are without significance. Neither long, tedious, hard, easy, precipitous, natural, or instrumental labors, nor the position, presentation, or condition of the infant at birth or subsequently, offer or suggest any circumstance or accident predisposing to its causation. There is nothing in the puerperal or clinical histories of the cases which satisfactorily explains its occurrence. The theory of Camerer that it may be caused by ligation of the cord before the cessation of the pulsation, and the broader view of King that it may be caused by ligation of the cord and abdominal binder, are not without force. The suggestion of King that the binder may be so applied as to obstruct the descent of the diaphragm and impair the movements of respiration, thereby promoting congestion of the internal genitalia, is at least plausible, and is corroborated by the co-existing turgescence and swelling of the external genital organs which have been observed in a number of cases, and by the occasional simultaneous occurrence of intestinal and genital hemorrhage in the newly-born. In the case reported, the circulation in the cord had ceased before the birth of the infant, and the binder

was not adjusted for at least two hours after respiration had been established; nevertheless the congestion was sufficiently pronounced to justify the conclusion that the internal organs, and especially the genitalia, were involved in the condition of general congestion. The non-occurrence of genital hemorrhage in the newly born male is not conclusive against the theory of localized hyperemia of the uterus and its adnexa in this class of cases. For in the female the anatomical distribution of the blood vascular apparatus of the pelvis, with its complex arrangement of valveless veins and venous plexuses, together with the peculiar and rich capillary system and venous trellises of the uterine body, seems to favor a localized congestion. The theory is not, however, entirely satisfactory. The actual infrequency of the cases of genital hemorrhage among female infants, and especially among those whose abdomens have been tightly embraced by the binder and whose cords had been ligated before the pulsation had ceased, must exclude the ligature and binder, either singly or conjointly, as the constant and only causes.

Camerer attempts to establish an analogy between genital hemorrhage and melena neonatorum upon the close identity of age at which these affections most frequently occur. Genital hemorrhage is confined to the female; melena occurs most frequently, but not exclusively, among males. Genital hemorrhage usually begins on the fourth or fifth day, but rarely impairs the general health of the infant, and is unattended with a fatal result; melena usually begins during the first or second day, is very profuse, and is fatal in one-half of the cases. In those cases of melena in which no anatomical lesion can be discovered after death, save an intense hyperemia of the intestinal mucous membrane, the analogy may be sustained upon the basis of sameness of the pathological lesion, but in the more usual and graver forms of melena the analogy ceases. Melena may be the symptom of various anatomical processes which are presumably absent in cases of genital hemorrhage. Among these may be enumerated disturbances of the venous circulation, asphyctic conditions, pulmonary atelectasis, congenital diseases of the heart, enlargement of the liver and spleen, gastric and duodenal ulcer of intra-uterine, embolic, or parasitic origin, fatty degeneration

of the small intestinal arteries, hemophilia, and embolism of the umbilical vein. If the theory of delay in the establishment of the lesser circulation and respiration in the causation of melena could be demonstrated, the premature ligation of the funis would acquire significance in the etiology of both of these forms of hemorrhage, and their analogy might be clearly made out. Embolism and blood stasis would be factors common to both. Nevertheless the infrequency of these affections, compared to the probable frequency of delayed lesser circulation and first inspiration, constitutes an insurmountable obstacle to the acceptance of the theory as a complete explanation of the causation. It may, however, offer an explanation for those cases of melena in which gastric or duodenal ulcers are present.

The assertion of Peuch that the hemorrhage always begins before the fall of the navel string, is contradicted by the fact that in one-third of the cases collated by Cullingworth it began after the sixth day, and in one as late as the twenty-first day. In fully one-third of the cases it begins on the fourth or fifth day, the days on which, in most cases, the cord separates. In more than half of the cases it begins during the first five days of life, and with rare exceptions continues four or five days. Jacob estimates the amount of blood lost at about "two cubic centimetres in twenty-four hours." In some cases the flow appears drop by drop, "as a sort of perspiration," but in both of my cases the oozing was continuous.

Peuch describes a prodromic condition of indisposition, marked by restlessness, crying, moaning, and unrest, with distention of the abdomen, flatulence, scanty urine, a fickle appetite, and more or less disturbance of the bowels. In a few cases the hemorrhage is preceded by swelling and turgescence of the external genitalia, which subside with the cessation of the flow. In others it is followed by a mucous discharge for a day or two. In some cases the mammary glands are enlarged and indurated, sometimes exuding, on pressure, a clear white fluid. In much the larger number of cases the prodromic symptomatology as described by Peuch is wanting, and the mammary complication and pudendal turgescence are absent.

The prognosis is favorable. Peuch asserts that no fatal case

has been reported. Vogel states that in two cases observed by him "profuse intestinal catarrh and atrophy ensued in a few days." Billard refers to two autopsies in which clotted blood was found in the cavities of the uteri, but he does not state that these were cases of genital hemorrhage. During the continuance of the hemorrhage in my first case, and for some days after its cessation, the child wasted much and rapidly, and not for several weeks did it regain its vigor.

In cases of such clinical insignificance treatment would seem to be nugatory. In fact, when occurring in robust, healthy infants, it would appear wisest to let it run its course to spontaneous cessation. It may, indeed, be a salutary hemorrhage, relieving a localized congestion of the pelvic viscera; and yet I am convinced that the fluid extract of hydrastis did have a beneficial effect in the case here reported. Peuch says "it must be watched but not combated."

LAPARO-VAGINAL HYSTERECTOMY, WITH THE REPORT OF A CASE.¹

BY

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It is my purpose in this short paper to discuss some of the methods employed for extirpation of the uterus, and to give my reasons for favoring a combined method in the more difficult cases.

By way of introduction I report the history of a successful case.

I wish to here acknowledge my indebtedness to Dr. Outerbridge, assistant surgeon, and to Dr. Anderson, house surgeon, for the faithful and intelligent care which made success possible.

Mrs. F. was admitted to my service in the New York Can-

¹ Read before the New York Obstetrical Society, February 18th, 1890.

cer Hospital January 19th, 1890. She is 57 years of age and the mother of eight children. The last child was born seventeen years ago. She has had neither abortions nor miscarriages. Menstruation began at 15 and ceased at 50. After the menopause she remained perfectly well until five months ago, when she began to experience slight pain and a sense of weight in the pelvis.

Two months ago, for the first time, she had a slight discharge of blood. This became continuous and at times profuse. Two weeks ago large clots of blood were discharged, with severe pain. Since then the discharges have been watery and offensive. Her last severe hemorrhage occurred one week before entering the hospital. She is anemic. Pulse and temperature normal.

Vaginal examination shows the cervix to be small, soft, and ulcerated, and bleeding easily from slight manipulation. It is on a level with the vaginal surface. The uterine canal measures four inches, and no discharge follows the withdrawal of the sound. The uterus is movable and the fundus is large. There appears to be no infiltration of surrounding tissues. Defecation is painful, and hemorrhage is more profuse at such times.

I decided that it was a case where hysterectomy was indicated, and, with the concurrence of my colleagues, I decided to operate.

On January 24th the patient was etherized and placed in the dorsal position, with limbs raised and supported with the Clover crutch; and assisted by Dr. Outerbridge, and Drs. Anderson and Davis of the house staff, I began the operation.

The vagina was first irrigated with 1 : 1,000 solution of bichloride. I found it necessary to enlarge the introitus vaginæ by two lateral incisions and one median, to gain room enough to introduce the speculum.

Bernays' uterotractor was then introduced up to the fundus and opened to its full extent, but it would not hold. Attempts to draw down the uterus by vulsella failed also, owing to the soft condition of the cervix. An incision was then made with scissors on the anterior lip large enough to admit the finger, and, after pushing away the bladder for a short distance, a firm hold was secured for the vulsellum. As I drew upon the vulsellum a small amount of pus appeared above in the holes made by the prongs of the vulsellum. The dissection of the bladder from the cervix was now proceeded with and completed; but, in spite of all my care, a small opening was made in the bladder. The posterior fornix was next opened by a transverse incision, and the incision about the cervix made complete. A bleeding point was caught on the left by forceps. The broad ligament on the left side was then

secured by a long pair of lock forceps, made with a curve for this purpose. The blades were introduced separately, so as to embrace, as far as I could judge from the measurement of the uterus, the whole broad ligament; then locked and clamped securely. For double security, silk was wound around the handles and securely tied. The uterus was then cut away from the forceps, leaving sufficient tissue, as high up as the body of the uterus. At this point the operation was stopped for a moment and a careful bimanual examination made. The uterus was found too large to be removed through the vaginal opening, and laparotomy was at once decided upon. After the abdomen was carefully prepared, an incision five inches long was made in the median line. Examination then revealed that fortunately the forceps had been applied just high enough to take in the whole broad ligament. The fundus was then caught by the large, sharp hook and drawn up, and out gushed a large quantity of thick, greenish pus through the hole caused by the traction upon the hook. Towels were quickly passed around and below the uterus, and little or no pus entered the abdominal cavity. Further escape of pus was prevented by a pair of strong forceps applied below the point where it issued. As a precaution, the abdominal cavity was thoroughly irrigated with hot water. A pair of strong forceps was then applied from below by Dr. Outerbridge, each blade being introduced separately as before, my hand guiding them to the top of the broad ligament. They were securely clamped and tied with silk as before. The uterus was then cut away from above and removed through the abdominal incision. The cavity was again thoroughly irrigated with hot water, and the abdominal incision closed with silver-wire sutures. Two Outerbridge mural drainage tubes were placed between sutures. The wound was dressed and bandage applied.

Iodoform gauze was packed carefully high up between the forceps and about them, and the whole covered with antiseptic cotton and supported by a T-bandage. The patient was then put to bed. The pulse was weak and rapid. Hypodermics of brandy were given, and improved her condition, and the first night was fairly comfortable. The next day the temperature did not go above 99°. The pulse reached 120. At the end of forty-eight hours the forceps were removed. The catheter was passed at intervals, but without drawing any urine. It all passed through the fistula. The second day the temperature rose to 101°; the abdomen became tympanitic and sensitive to touch. The ice cap was applied and the bowels opened by cathartics. Afterwards the temperature fell to 99° again, and pain and tenderness disappeared. For three days the patient was able to retain nourishment. Then the stomach rejected everything, and it was necessary to feed her

by the bowel, after which she could take her food by the stomach. As the temperature ran up again, the abdominal wound was explored and opened, and about an ounce of pus evacuated. The vagina was at first irrigated by a one-half of one per cent mixture of creolin, but as this irritated the cuts in the vagina a 1:5,000 solution of bichloride was substituted and continued to the present time. Two large rubber drainage tubes have been kept in the vagina to allow free escape of urine and the discharges from the wound. In the third week two small mural abscesses were discovered and opened. The usual amount of slough came away, by the vagina, from time to time. The condition of the patient at the end of three weeks and three days is good. She sits up in bed a short time each day. Her appetite is good and she enjoys her food. The bowels move naturally and without pain. The temperature is normal and the pulse good. The vaginal wound has contracted down to a diameter of less than half an inch, and looks clean and healthy. The discharge is now chiefly urine. The bladder now can retain an ounce or more of urine. The fistula is rapidly growing smaller and may close spontaneously. The patient is to-day in far better condition than before the operation.

The report of the pathological examination of the specimen by Dr. Freeborn is as follows :

The uterus is enlarged, measuring seven and one-half centimetres across the horns, four and one-half centimetres in the antero-posterior direction across the fundus, and about nine centimetres in length. The cervix is very much lacerated. The organ has a flabby feeling, and on pressure pus escapes from several small openings in the fundus near the left horn. Upon opening into the cavity of the organ by a longitudinal incision through the anterior surface, it is found to be dilated down to the internal os, and partially filled with a reddish-colored pus of creamy consistence. The anterior surface of the cavity has the appearance of granulation tissue; in the upper left-hand side of the cavity there is a pocket containing pus, and attached to its wall is a stringy mass of necrotic tissue. In the upper and posterior wall of this pocket is a rent, in the walls of the organ, extending quite to the surface, and it is through this rent that the pus (see above) escaped.

Microscopical Examination.—Fundus : Mucous membrane all destroyed, with a considerable area of necrotic muscular tissue, the remainder of the muscular tissue infiltrated with pus. Middle of the body : Mucous membrane entirely replaced with granulation tissue. Lower part of the body and upper part of the cervix : Shows a few mucous glands left, the

connective tissue being infiltrated with a large number of small round cells.

The cervix proper shows carcinoma. Throughout the whole of the muscular tissue the blood vessels have collections of small round cells around them.

A few years ago this operation was not considered a legitimate one, so great was the mortality and so few were the cases where life was prolonged or rendered more comfortable. Better selection of cases, and improvements in methods and facility in operating, have brought more satisfactory results, and the fact that so many eminent surgeons are doing the operation attests its present standing as a justifiable one in suitable cases.

It is not my purpose to enter upon the discussion of when and when not the operation should be performed, but merely to bring out, if I can, the best points in the methods now generally employed.

It is hardly to be disputed that the method, or combination of methods, that will subject the patient to the minimum of shock, the loss of the least amount of blood, and is at the same time as thorough as any, is the one to be preferred.

For illustration, possibly I cannot do better than take the history of the operation in the case above related. To begin with, there was a small vagina, whose introitus had to be enlarged to admit of any work whatever being done. Next, the difficulty of gaining a hold for Bernays' forceps or vulsella for traction. After this was attained, it was possible to draw the uterus down sufficiently to separate it from the bladder. The opening in Douglas' pouch was easily accomplished. Then the most important question presented itself: how to secure the arteries and the broad ligaments. It was impossible, or nearly so, to apply ligatures. There was not room enough, and the uterus could not be brought low enough to warrant any security in tying. Forceps had therefore to be resorted to, if the operation was to be completed by the vagina. Would it be best to apply forceps and thus proceed step by step till both broad ligaments were thoroughly secured and the uterus cut away? Those who have done this know how difficult and tiresome a piece of work it is under the best of circumstances. To do it in this way would have taken a

serious length of time, and six or more forceps would have been left in the vagina, which would have so completely filled it that it would have been impossible to remove the uterus. I therefore decided to apply the long forceps, to secure the entire broad ligament on each side. After adjusting the one on the left side, I discovered that it would be impossible to remove the uterus, even if it were cut in two in its long axis. Laparotomy was therefore necessary. The question here arises, Would it have been better to do the suprapubic operation at the start and ligate all the vessels from above? I think not. The forceps was applied more quickly than ligatures could have been. This is especially true of the right broad ligament, as the forceps was guided by my hand in the abdominal cavity. The application of the forceps to the left broad ligament so as to just include it all was a piece of sheer good fortune and could not be expected a second time.

As a result of the experience I have thus far been able to gain, the following conclusions seem to be justified: That in cases where the vagina is capacious, the uterus can be easily drawn down and is not too large for extraction, the vaginal method is the preferable one; that where the vagina is small and the uterus not easily drawn down, a combined method should be chosen.

For myself I have formulated the following plan: To do vaginal hysterectomy in cases where it can be easily and quickly done; but in cases where the vagina is small and the uterus difficult to draw down, I would first make a short abdominal incision, low down in the median line, and a small opening into the peritoneal cavity, just large enough to admit the tip of the index finger. This opening in the peritoneum I would then temporarily close by a small clamp, and cover the wound with an antiseptic pad. I would then proceed as for vaginal hysterectomy. When it came to securing the broad ligaments, I would apply the forceps as in the case related, guiding their adjustment by the index finger of the left hand passed through the abdominal opening. This method admits of thorough irrigation from above. If the uterus is found too large to be removed per vaginam, the abdominal incision can be at once enlarged and the uterus removed from above.

A SUCCESSFUL CASE OF CESAREAN SECTION.

BY

FRANK M. DONOHUE, M.D.,

New Brunswick, N. J.

ON December 12th, 1889, at 4 A.M., I received a note from Dr. Compton, of Bound Brook, N. J., requesting me to meet him in consultation in a case of difficult labor which he thought required operative interference. Hastily putting my craniotomy instruments into a satchel, I started, and reached the house of the patient about 5 A.M. I met there Dr. Compton, who had been in attendance since Saturday, December 7th, when labor began, and Dr. C. R. Fisher, who had seen the patient the night before in consultation. They stated that there had been considerable difficulty in making a diagnosis, but were satisfied that there was a growth in the pelvis which would prevent the child from being delivered *per vias naturales*. I found a healthy-looking woman, age 30, married about one year, previous health good, who gave no history of any abnormal feelings during her child-bearing period. Occasionally she had had pain on the right side, low down; but, with this exception, she had not suffered as much inconvenience as is usual during the first pregnancy. Her labor pains began on December 7th, continued at long intervals, and now she was having well-marked uterine contractions every ten minutes. An examination of the abdomen showed the buttocks of the child at the fundus uteri, the head pushed over into the left iliac fossa above the pelvic brim. The fetal heart sounds were heard rather feebly in the umbilical region—about 130 beats per minute. Passing the finger into the vagina, I came in contact with a large, globular body, of firm resistance, which filled up almost entirely the brim of the true pelvis. The tumor was hard to the touch, and conveyed to me the sensation of a fibrous growth, which, I was sure, was not connected with the uterus, on account of a distinct line which existed between the growth and the cervix uteri. By passing the finger high up into the pelvis and well over to the left side, the os was felt lying close to the ilium, almost on a line with the ant. sup. spinous process. It was dilated to about the size of a silver dollar, the membranes intact, the head of the child recognized, and the sagittal suture running almost directly upward. By grasping the fundus with the hands on

the abdomen, the uterus could be moved without causing any change in the position of the pelvic tumor.

I gave an opinion that the growth was a fibroma of the right ovary; that an attempt should be made to push the tumor out of the pelvis, and, this failing, that Cesarean section be done without delay. The patient was placed in the knee-chest position, two fingers introduced into the vagina, and a firm, decided pressure was made on the tumor. This manœuvre showed the tumor to be immovably fixed in the pelvis. No impression was made upon its position, and the operation was advised and readily accepted by the patient and family.

Not having with me the proper instruments for laparotomy, I returned to my office to secure them, and at 2 P.M. I was again at the house of the patient. Ether was used, the vagina washed out with hyd. bichlorid. solution, 1 : 4,000, the pubes shaved, the abdomen thoroughly scrubbed with soap and water, and washed with solution hyd. bichlorid. An incision was made from umbilicus to within two inches of the symphysis pubis, and the abdomen opened rapidly. As the peritoneum was opened at the lower part of the incision, the bladder, which had been previously emptied with a catheter, presented in the wound. Its anatomical relations had evidently been disturbed by the pressure of the growth. The lips of the abdominal wound were pressed closely to the uterus, and an incision five inches long was made into the upper segment, the amniotic sac opened rapidly, and the waters allowed to escape, care being taken to prevent any fluid from running into the abdominal cavity. An arm of the child presented, was seized, and an attempt made to lift up the head towards the incision. This was impossible without some risk to the uterus, and, as the feet seemed to be so far out of reach, I passed my hand into the uterus down under the head of the child, lifted it out of its impacted position, and delivered it easily and quickly. There was feeble pulsation in the cord, which was tied, cut, and the child passed over to an assistant for resuscitation. Artificial respiration was resorted to; a few feeble attempts at breathing were made, but at the end of about twenty minutes the heart beat ceased. The placenta was found near the fundus and posteriorly. It was lying almost loose in the uterus, and had evidently been separated by the prolonged uterine contractions. It, with the sac, was delivered through the incision. At the top of the incision in the uterus two large venous sinuses were bleeding freely, and, as it was found impossible to grasp the mouths of the vessels by forceps, a needle threaded with fine silk was passed into the uterine tissue underneath them and tied. This promptly stopped all bleeding. The uterus was now well washed out with solution hyd. bichlorid., 1 : 10,000, and the incision closed by two sets of silk

sutures, one running down to but not through the decidua, the other including peritoneum only. The abdomen was now thoroughly cleansed, and the tumor examined with reference to its removal. It proved to be a fibroma of the right ovary, lying behind the uterus, immovably packed in the pelvic cavity, and attached not only to the right side of the pelvis, but also by a very broad and firm attachment to the anterior wall of the rectum. There was also an adhesion to the left pelvic wall, low down. I decided not to make an attempt to remove it, as I was sure that it would be a prolonged, bloody, and very difficult operation, if it could be done at all, as the patient was already beginning to show decided signs of shock. My assistants agreed with me that it would be wiser not to attempt its extirpation. The abdomen was closed by three sets of sutures; one, of iron-dyed silk one inch apart, passing through the whole thickness of the abdominal wall, including the peritoneum. Before these were tied a continuous suture of catgut was placed in the peritoneum alone. The deep sutures were now tied, and a third set of white silk ones were placed in the abdominal wall external to the peritoneum. No drainage tube was used. Iodoform gauze, salicylated cotton, and a bandage completed the dressings. The vagina was again washed out, the bladder emptied, and the patient placed in bed between blankets. Time of operation, one hour. Present, Drs. Compton and Fisher, of Bound Brook, N. J.; Dr. Matthewson, of Somerville; and Dr. E. B. Young, of New Brunswick.

By permission of Dr. Compton, under whose care the patient was placed, I visited her once a day for the subsequent two weeks. She reacted well from ether—no vomiting, no pain. The vagina was douched twice a day with creolin, 1:100, and the catheter used three times a day. The first three days her pulse ranged from 100 to 110, temperature 99° to 100° . On the fourth day her pulse reached 120, temperature 103° , with decomposition of lochia and decided septic odor. I now passed a double catheter to the top of the uterus and washed it out with sol. hyd. bichlorid., 1:4,000, which promptly brought down the temperature to 99° and corrected the fetor. The vagina was now washed three times a day with creolin, and her temperature and pulse gradually reached the normal points. The deep sutures were removed on the tenth day, when the wound was found completely healed throughout. The superficial ones were removed three days afterward. From this time her convalescence was steady, though her strength slowly returned on account of two well-marked paroxysms of intermittent fever, from which she had previously suffered. I had an opportunity, three weeks ago, of examining the tumor, and was pleased to note a decided diminution in its size and

consistence. It seemed to me to be not more than one-third as large as at the time of operation.

This case is interesting from many standpoints. First, on account of the rarity of the condition which caused obstruction to childbirth, most of the operations being required on account of contractions or deformities of the pelvic bones or bony growths from them. Second, the fact that the patient had had no symptoms of any unusual conditions during gestation. Third, the almost complete separation of the placenta before the delivery of the fetus. I am sure that this fact led to the death of the child, for when delivery took place the skin presented a macerated, sodden appearance, which indicated a gradual cutting-off of the capillary circulation. Fourth, the recovery of the patient without any serious drawbacks, and the diminution in the size of the tumor after the stimulus of pregnancy had been removed. I desire here to express my thanks to Dr. Compton for his unremitting attention to the patient during the after-treatment, and to the other gentlemen named for valuable assistance during the operation.

TRANSACTIONS OF THE NEW YORK OBSTETRICAL SOCIETY.

Stated Meeting, January 21st, 1890—Continued.

DR. JOHN BYRNE read a paper on

A CASE ILLUSTRATING THE VALUE OF THERAPEUTIC MEASURES IN CHRONIC AND RECURRING PELVIC CELLULITIS.

Mrs. A., age 32, commenced to menstruate at 13, and continued to do so regularly until her marriage, which took place ten years ago.

During the first two years of her married life she miscarried twice, on both occasions the result, probably, of interference to that end. Seven years ago, being at the close of the eighth month of gestation, she met with an accident by falling, and in two weeks thereafter was delivered by forceps of a still-born child, after which she had general peritonitis, and from which she barely and very slowly recovered. Since then, though she has suffered occasionally from inguinal pains and backache, especially after fatiguing exercise, yet menstruation was regular and conception took place twice, but each time she aborted.

About the early part of last February, and as a result of exposure to cold,

she had an attack of what I presume to have been metropéritonitis, and though the more acute symptoms subsided under general treatment, yet she continued to suffer much from recurring pyrexial attacks, pelvic pains, frequent and difficult micturition, and obstinate constipation. Gastric irritability was excessive, so that but little nutriment could be taken or retained; night sweats were profuse, and, as a consequence, emaciation was very pronounced.

Such was her condition when, towards the end of March last, she sought the advice of a prominent gynecologist in New York, who, after a full inquiry into her previous history and a careful examination, stated that her ovaries and tubes were in such a diseased condition that their removal by laparotomy offered the only hope for a restoration of her health.

This not quite unexpected alternative was readily accepted, and she returned to her home with the intention of making arrangements to enter the doctor's private hospital. On further reflection, however, certain difficulties in carrying out the proposed arrangement were found to exist, not the least of which was the necessary expense; so, by the advice of some friends, she decided to enter St. Mary's Hospital.

At this juncture, and her medical attendant having obtained my consent to operate in case she should go there, *and provided my diagnosis of the case should warrant such a proceeding*, I was requested to visit her at her residence.

I saw her, therefore, for the first time on the 9th of April last. On examination the uterus was found to be resting on the perineal floor, fixed and immovable, and the peri-uterine tissues in every direction swollen and exquisitely tender to the touch, and bimanual examination failed to detect any distinct prominence in either fossa.

I looked upon the case as one of general pelvic cellulitis, and that she *was then*, at least, in no fit condition for laparotomy. Moreover, as she had had no rigors, I felt that absorption or resolution might possibly be brought about by local and general treatment, and to this end the following course was advised—namely, warm poultices over the lower abdomen, to be changed every four hours; hot vaginal douching morning and evening, to be followed each time by tampons saturated with a solution of iodide of potassium in glycerin (thirty grains to the ounce); a rectal suppository containing five grains of iodoform, two and one-half grains extract of conium, and two-thirds of a grain of sulphate of morphia every night; enemata of flaxseed tea and glycerin; and quinine and iron internally.

On May 9th, the course of treatment here laid down having been pursued but a little over two weeks, I called to see her, and found a remarkable change for the better in her condition; the pelvic pains and reflex gastric disturbance had almost entirely disappeared, and her cheerful expression alone indicated a degree of improvement far beyond my expectations. On examination the peri-uterine swelling was found to be much reduced, the uterus less fixed, and the cervix would admit of lateral motion to a considerable degree without pain. The treatment, with but little modification, was perseveringly continued, and on May 25th, when I called to see her, I was informed that she had been able to sit up most of the time for several days past, and after a few moments was greeted by a cheerful and, I may add, grateful patient, who advanced to meet me with a quick and elastic

step. On examination I found that condition of the parts which every physician of much experience would at once recognize as the result of extensive pelvic cellulitis, but the most careful bimanual examination failed to detect anything indicating tubal distention, or ovarian enlargement or displacement.

Since then and up to the present time she has enjoyed perfect health, menstruates regularly, and has fully regained her original weight.

The lessons derivable from an unprejudiced consideration of the foregoing case would seem to me to be twofold: *First*, that inflammatory engorgements of the peri-uterine connective tissue in the non-puerperal state, though often co-existing with, and sometimes a sequence to, tubal and ovarian disease, may nevertheless arise, develop, and disappear as a distinct pathological entity—*e.g.*, the edema of utero-ovarian phlebitis; and, *secondly*, that recurring attacks of inflammation in these parts—there being no positive evidence of pyo-salpinx or pus cavities, but, on the contrary, a condition so often known to be responsive to judicious treatment, local and constitutional—should not be considered as warranting or justifying even explorative laparotomy, much less sexual mutilation.

In other words, a due regard for a woman's prospective comfort and social happiness demands that, in all such cases, a persistent trial of every rational therapeutic measure shall have been tested before opening her abdomen and removing her tubes and ovaries.

Perhaps I ought to apologize for calling the attention of the Society to so commonplace a subject as pelvic cellulitis, though one of the most frequent inflammatory ailments to be met with in women, if we exclude such as are coincident with or following the puerperal state. I cannot believe, however, that any very large proportion of our gynecological brethren, in spite of recent plausible explanations, feel at all at ease with the present conflicting views regarding the etiology of these pelvic inflammations. Hence I have taken this method of bringing the subject before you, with the hope that its discussion may result in a clearer conception of important pathological landmarks in danger, I fear, of being obliterated, and the adoption of some fixed principles of treatment by which removal of the uterine appendages may be resorted to and justified as a *dernier ressort* only.

DR. COE thought that it was to be regretted that, instead of indulging in fruitless discussions on the nature and relative frequency of cellulitis and salpingitis, we did not adopt some term, such as "peri-uterine inflammation," which should serve as a compromise. Just before coming to the Society he had been reading one of the most recent monographs on this subject, by Dr. Maury ("American System of Gynecology"), in which he came across this sentence: "Pelvic cellulitis is essentially an acute disease. If at times it appears to be chronic, it is so because of its association with pelvic peritonitis, to the continuance of which it owes its chronicity." This described the pathology of the condition fully. He believed that what Dr. Byrne had described as recurrent attacks of chronic cellulitis were really fresh attacks of acute inflammation, for it did not seem to him that the anatomical condition known as "chronic cellulitis" could be recurrent, any more than could old pleuritic adhesions. He believed that what Dr. Emmet had described as chronic cellulitis was simply a cicatrix in the peritoneum or cellular tissue, or both, the result of a former acute inflammation of those tissues. This subject had been studied experimentally by Bumm, who had demonstrated beyond question that there was no such thing as a purely traumatic cellulitis; peri-uterine inflammation was always of septic origin.

This showed that the uterine mucosa was the starting point of the trouble, and was especially interesting from a surgical standpoint. It would seem as if we could not have recurrent attacks of inflammation without having fresh absorption of septic material—*i.e.*, such attacks were essentially of an acute character.

The case reported in the paper recalled an almost exactly similar one which the speaker had seen, in which an abortion was followed by an apparently typical attack of acute cellulitis. A pelvic abscess formed, which was opened and drained per vaginam. The patient was relieved for a time, but she then began to have recurrent attacks of inflammation. Finally the abdomen was opened and a double pyo-salpinx was found. There was no cellulitis, but there was pelvic peritonitis with general adhesions, and it was found that the supposed abscess which had been opened was in reality a large pyo-salpinx at the bottom of Douglas' cul-de-sac.

He supposed that this question would never be settled to the satisfaction of everybody, but it did seem to him that a compromise might be effected, based on actual pathology rather than on theory. As we all knew, in cases of severe salpingitis the patients improved very much under treatment (just as did the one whose history had been read), so much, indeed, that one might suppose that they were going to be cured; but sooner or later a fresh attack of inflammation occurred, and their condition was as bad as it had been before. It was for that reason that so many believed in removing the cause of the trouble instead of continuing with palliative treatment directed against so-called chronic cellulitis.

DR. WYLIE thought the difference of opinion on this subject was to be accounted for largely by the fact that men criticised one another's work without really knowing what they were criticising. A man would rise and relate a case which he thought was similar to those which others operated upon. But not having seen those others, it was probable that he did not know much about them. Another man would write a paper criticising one by somebody else in which an operation was described which had been performed altogether only two or three times. The critic, knowing nothing about his subject, was sure to fall into errors.

With the greatest respect for Dr. Byrne, he must say that if he had such a case he would not speak of it as one of chronic pelvic cellulitis. He might recognize that the cellular tissue was more or less edematous and involved in the inflammation, but he would treat the case as one of acute metritis: that is to say, one in which the endometrium was inflamed, together with more or less implication of the walls of the uterus and edema in the connective tissue. He would not class it among cases of diseased tubes and ovaries. He might have suspected the last-named condition on hearing the history, but examination would have shown the real condition. Before thinking of opening the abdomen to remove the tubes and ovaries, he would have adopted measures to reduce the size of the uterus and any swelling of the connective tissues which might have been present.

In fact, he did not believe the tubes and ovaries were implicated, and consequently an expert would not have thought of doing laparotomy. Speaking from his own experience, many of his cases had been under observation a long time before the abdomen was opened. Among his first, some had been under treatment by other measures for two years, and all of the first fourteen had been under observation several weeks before the tubes and ovaries were removed. He was careful because it was a new procedure. If the condition found was one of acute inflammation of the uterus, or acute inflammation of the connective tissue (which was a rare thing), an operation was not performed. As Dr. Coe had said, there was no such thing as chronic cellulitis. He had long asserted that he did not believe in removing the tubes and ovaries simply for reflex nervous troubles. But if the tubes contained pus, were distinctly enlarged and thickened, and local peritonitis existed—conditions for which the patient sought relief—he believed that nine times out of ten she could secure it only by submitting to an operation. Her symptoms might be improved to some extent by other treatment, and possibly in certain cases the pus might become more or less absorbed, or be

surrounded by adhesions and remain quiescent, but the patient was not well.

Now and then he was under the necessity of putting a patient under ether during the examination, in his uncertainty whether the tubes and ovaries were diseased; and, with rare exceptions, he was always able to determine this point after the patient had been anesthetized. He had, however, found himself in error two or three times, and abandoned the operation after opening the belly. In those cases the subjective symptoms certainly warranted an exploratory incision.

If the gentlemen who differed so much from those who operated frequently would only take the trouble to come and witness ten, fifteen, or thirty cases, which was only a fraction of those he operated upon during the year, he felt certain that their views would change, and that they would admit that women whose tubes and ovaries were healthy were not operated upon by men in this city.

Dr. W. M. POLK was much interested in the subject of the paper, not only because of its pathological aspect, but also because of its even broader therapeutic aspect. Of course those who had been in the profession prior to five years ago had accepted the teachings of the leading writers at that time concerning pelvic cellulitis and pelvic peritonitis, the two inflammatory conditions grouped together by Dr. Coe under the term peri-uterine inflammation. In time we began to view most of these cases as those of pelvic cellulitis, which meant, if it meant anything, inflammation of the cellular tissue around the uterus, between the peritoneum above and the vaginal roof below. While in that frame of mind, we had brought to us the knowledge that there was a disease called salpingitis, which up to that time had occupied but very small space in the text books.

It had, however, been known long before, and written upon rather elaborately by one or two authors. After attention had been generally called to disease of the tubes, there was at first surprise, and then there began its cure-all—laparotomy. It so happened that a large public hospital—Bellevue—was the place where a large proportion of those cases came. Previously they had usually been sent to the Island as incurable. When, however, they began to open the abdomen and remove the diseased tubes, it was observed that the patients got well. It had occurred to him to institute a comparison between the history and physical condition presented by those patients and patients who had been in the hospital for cellulitis previously without any preconceived notion of salpingitis. This comparison was made both before and after the operation in a number of cases. He found that the histories corresponded with those of cases which had prior to that been described in text books as cases of pelvic cellulitis and pelvic peritonitis. There was the condition which Dr. Byrne had spoken of, but when he opened the abdomen he found adherent tubes and ovaries and a certain amount of peritonitis. He took the tubes and ovaries out, and then, with the hand of his assistant in the vagina opposed to his own in the pelvis, he failed to detect any mass which previously had seemed to be present. Therefore he could come to but one conclusion, namely, that the condition which had been known as pelvic cellulitis was nothing whatever but tubal disease associated with local peritonitis and inflammation of the ovaries. As a matter of fact, since he had opened the abdomen in these cases he had never seen one of pelvic cellulitis. He was not now speaking of obstetrical but of gynecological cases. Of course immediately after delivery one occasionally saw pelvic cellulitis as a result of the puerperal process.

The question of treatment, however, was one of even greater importance. He believed that every man at all engaged in the work of laparotomy would indorse every word which Dr. Byrne had uttered, including the treatment instituted in his case. He was satisfied that there were cases of tubal disease with associated peritonitis such as Dr. Byrne had described. Indeed, he was convinced that this case was one of salpingitis, with probably inflammation of the ovaries. Further, he was satisfied that the majority of such cases got well. They had formerly gotten well under the term cellulitis, and there was no reason why they should not now recover under the term

salpingitis. The treatment found efficacious under the old nomenclature would be found fully as efficacious under the new. But where it had failed formerly it would fail now. Doubtless Dr. Byrne could himself recall cases which formerly were called cases of chronic recurrent cellulitis, in patients who went the rounds of the hospitals as incurables, until we began opening the abdomen, and, when we found disease of the tubes and ovaries, removed them and effected a cure.

But the moment that this treatment began to get a foothold it was thought by some that because a woman had some pain, and a little induration was found around the uterus, she ought to have the tubes and ovaries taken out, and the consequence was that a number of these organs were sacrificed without justification. But then that was apt to be true of nearly every new method of treatment, whether surgical or medical. Many of the tubes needlessly sacrificed were indeed inflamed; they were in a condition which we found after a while to be catarrhal salpingitis, and which would usually get well without operative procedure.

In another class of cases we found the tubes and ovaries bound down firmly by adhesions, and experience had shown that many of the patients did perfectly well if, instead of removing them, they were simply freed from their adhesions and the position of the uterus perhaps changed. He himself had had about twenty cases of that kind, and all had done well. It should be remembered, however, that in them the ends of the tube were still patent. In another class of cases we found the tube containing pus, and on examination it was found to be occluded. For the present there was no excuse for leaving such a tube in the abdomen after making an exploratory incision.

But there was one thing which had not been taken sufficiently into consideration in removing the uterine appendages, namely, the effect of castration upon the well-being of the patient. The operation had usually consisted in not simply removal of the tubes, but also of the ovaries, and he was not at all certain that castrating a woman at the age of twenty-five or thirty years was as harmless in its results as we had been led to believe.

If one cut off the tube and left the ovary, he could not foretell exactly what would be the result. In practice, however, he had (since April, 1887), in cases of pyo-salpinx with occluded ends, laid the tubes open longitudinally a distance of half an inch, washed them out, attached them to the abdominal wall near the wound, and drained them. In other cases, in which the fluid contained within the tubes consisted merely of blood or mucus, he simply cut into them and washed them out, removing no structure, and returning all to the pelvis.

He would, therefore, suggest that when we had a case of so-called recurrent cellulitis or recurrent salpingitis which refused to yield to other methods of treatment, the abdomen be opened, simply, however, as an exploratory procedure, and, if the tubes be found in a condition demanding removal, take them out, but if possible save them. He refused to take out an ovary unless it was practically destroyed by disease, as when riddled with cysts. But when it came to a tube containing pus, and yet so little distended as to offer hope of recovery, the course to be pursued was not quite so clear. Yet he was disposed in these cases to open the tube, wash it out with a bichloride solution, put in iodoform gauze, and attach the tube *inside* the abdominal wound, placing around it, between it and the peritoneum, a sufficient amount of iodoform gauze to effect complete isolation. The importance of saving the tubes and ovaries to some women justified some additional risk of ventral hernia.

If the ovary contained a small cyst, it was his custom to treat it according to the method suggested by Schroeder—enucleate the cyst, and with fine catgut sutures turn the edges in and drop the ovary. His results had been good.

Of course there were cases of hydro-salpinx, pyo-salpinx, and hemato-salpinx which necessitated removal; but he believed there were many cases of disensed tubes with ovaries which could be saved if treated in the manner he had described, while formerly they would have been sacrificed.

In 1886 (see *New York Medical Record*, September 18th, 1886) he had

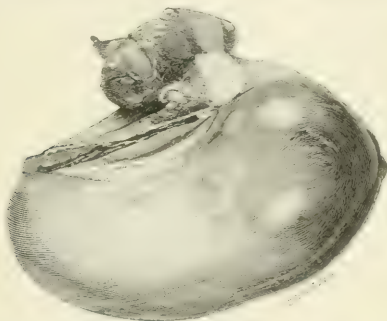
expressed a belief as to the curability of tubal disease, which he was glad to see was being gradually accomplished.

TUBES, ENORMOUSLY DISTENDED WITH PUS, REMOVED WITHOUT RUPTURE.

DR. CLEMENT CLEVELAND, in discussing Dr. Byrne's case, presented specimens with the following history :

Elizabeth H. entered my service at the Woman's Hospital January 15th, 1890. Dr. Brown, of the house staff, kindly furnished me the following history :

Age 24. Married one year. The patient began menstruating at 15 ; has always been regular, menses of the twenty-eight-day type and attended by slight pain during the flow, which lasts for four days. For the last four months the flow has been scanty. She was married one year ago, and has had no children. Six months ago she noticed a mass on her right side, though she experienced no pain over it. This mass has been growing in



size, especially for the last two months. The patient comes into the hospital because of the sterility, the mass on right side having caused her no physical discomfort. She has a slight leucorrhea, which she says increases in amount upon standing for some time and on moving about. Her appetite is good and she sleeps well. On January 15th Dr. Cleveland gave the local condition as a mass on the left side ; uterus forward and normal in size ; also mass on right side ; both masses fixed, so that a positive diagnosis was impossible. Advised exploratory incision.

January 20th, assisted by Dr. Hawley, and Drs. Burrage, Keith, and Brown of the house staff, I performed laparotomy. The primary incision was $1\frac{1}{2}$ inches for exploration, afterward enlarged to 5 inches. The omentum was found adherent to peritoneum and had to be torn through, and this was accomplished without producing any great amount of bleeding. On the right side, attached to intestines, omentum, and side of uterus, was found an immense tube, which, with the ovary, was removed with difficulty. I succeeded, however, in getting it out without rupturing. The mass on the left side was so thoroughly adherent everywhere and so embedded in the pelvic cavity that it was removed with the greatest difficulty, and in

doing so it was slightly ruptured and from 4 to 6 ounces of dark, offensive pus escaped into the cavity. I at once caught the opening made in the tube by a pair of forceps, and before ligating and taking it away thoroughly irrigated the abdominal cavity with hot water. About 6 ounces more of pus remained in the tube. After removal the abdominal cavity was again thoroughly washed out with hot water. The incision was closed with silver-wire sutures, the abdomen dressed in the usual manner, and the patient put to bed. The dimensions of the right tube are: Length of the tube from the horn of the uterus, 9 inches; length from the beginning of the dilated tube to fimbriated extremity, 6 inches; largest diameter, 3 inches. The remarkable feature about this case, besides the enormous size of the tubes, was the almost complete absence of symptoms due to their presence. The patient recovered.

DR. H. J. BOLDT thought all must have been much interested in the narration of Dr. Byrne's case. For himself, he felt much inclined to agree with what Dr. Wylie had said regarding the propriety of operating for the condition indicated by the history and physical condition found in this patient. The result of the treatment adopted by Dr. Byrne verified the view that laparotomy would not have been justifiable.

He wished, on the other hand, to present some specimens, removed during the past few weeks, which practically demonstrated the propriety of operating in cases which even to-day were called, by some, cases of pelvic cellulitis. The inflammatory attacks had recurred frequently, say every three weeks to three months, for a number of years. The condition found in the pelvis on examination was precisely that which formerly we were accustomed to find in pelvic cellulitis. He had long since, however, come to the conclusion that even without opening the abdomen we could safely say the condition present in such cases was not one of pelvic cellulitis, but, strictly speaking, one of disease of the tubes and ovaries, with parametritic exudation which might lead one to wrongly suppose that there was inflammation of the cellular tissue. He did believe, however, that one could have a pelvic cellulitis independent of the puerperal state, due to operative interference, such as dilatation of the cervix, trachelorrhaphy, etc. But accompanying it was pelvic peritonitis. The one condition did not occur alone. The cause of recurring inflammation, he thought, was invariably to be found in disease of the tubes, as had been demonstrated by hundreds of cases operated upon by gynecologists in New York and elsewhere.

DR. WYLIE, referring to Dr. Cleveland's case, said he had never been able to remove such large tubes intact. Where they contained pus he made no effort to do this, but first emptied them by use of the trocar, washed them out with bichloride solution, and then enucleated them.

DR. CLEVELAND remarked that he had attempted to puncture the tumors in this case through the small abdominal incision, but was unable to do so, and therefore enlarged the opening to over five inches, through which they were removed intact.

DR. GOELET remarked that if such cases as Dr. Byrne had described were due to salpingitis, they certainly were not all due to pyo-salpinx. All cases of salpingitis do not result in pyo-salpinx. If, in catarrhal salpingitis starting from inflammation within the uterus, the end of the tube remained patent, permitting free discharge of its contents into the uterus and vagina, the case might go on for some time without producing marked physical symptoms. But if something should occur to check the menstrual flow, as taking cold during the period, symptoms like those present in Dr. Byrne's case, and described as pelvic cellulitis, might come on very rapidly. The condition known as chronic pelvic cellulitis, which he had always taken to be an exudation or induration due to inflammatory process, did in some instances get well, sometimes with little or no treatment. Take, for instance, a case put under his care last spring by Dr. Wyeth, in which he found the

patient in bed, with exquisite tenderness on the left side, too much to permit a thorough examination. He did not dare administer chloroform in order to establish the diagnosis, because of the patient's very weak condition, and was therefore able to make out only slight fullness and hardness in the region of the left broad ligament. After getting her in a condition so that he could make a more thorough examination, he was able to distinguish a tumor in the left ovarian region, but could not say just what its nature was. He made one application of galvanism, seventy-five milliamperes, without attempting to make a more positive diagnosis than to say there was probably an indurated mass due to a circumscribed chronic cellulitis. Shortly after making this one application he went to Europe, and did not see the patient again until his return, when he met her and persuaded her to come to his office for examination, although she did not think it necessary—she felt so much better. Greatly to his surprise, he could then feel only a little thickening at the site of the tumor, which formerly had been at least as large as his fist. She felt no pain except on walking long distances, or stepping down suddenly from the curbstone, or going down-stairs. He did not feel disposed to attribute this marked result to a single application of electricity.

He then made one galvano-puncture, about half a centimetre in depth in the vagina, into the substance of what remained of the tumor, using fifty milliamperes positive. She returned within three or four days, and, although the application had been painful, she said she could then go down-stairs rapidly and walk any distance without experiencing any pain whatever. This was two months ago, and there had been no return of pain. He believed that practically there had been a perfect cure, both symptomatically and anatomically, for absolutely nothing abnormal could be detected on examination.

He had found intra-uterine applications of electricity for catarrhal salpingitis more satisfactory than any other form of treatment. The positive pole was to be used. It certainly relieved the endometritis which, it might be said, was always associated with catarrhal salpingitis, being in some instances the origin of the trouble. Ordinary cases of chronic cellulitis, he thought, should first be treated by positive galvanism in the vagina, and later by the negative pole, and they would get well quicker than by the plan adopted by Dr. Byrne. But when progress toward recovery was not sufficiently rapid, it could be hastened by positive galvano-puncture. He laid stress on positive puncture, because it produced less irritation than the negative, and was absolutely harmless, leaving no slough or eschar, as some suppose. An induration the size of a shot might remain under the surface, causing a little soreness for a week, but no other inconvenience whatever. In some of the cases in which the uterus was perfectly immovable, one, or possibly two, galvano-punctures would make it quite free.

He could see no necessity for operation in such cases as the one related, and would certainly consider it contra-indicated until every means to effect a cure had been exhausted.

DR. BYRNE, in closing the discussion, said he thought, with Dr. Coe, that it was unfortunate that the profession could not be united on some nomenclature expressive of the etiology, or at least the pathological conditions, observed in each case. He believed, however, that the majority of physicians, in applying the general term cellulitis to these peri-uterine engorgements, were not unmindful of the importance of differentiation.

With regard to the somewhat emphatic protest of Dr. Wylie against such criticism of the exploits of oöphorectomists as the relation of this case might imply, he had only to say that if the removal of tubes and ovaries were to go on throughout the entire country as it had in the last two or three years, it would simply be a disgrace to the profession. Of the subsequent history of patients operated upon we know and are told but little, nor do recorded cases comprise the whole by any means; and yet, when we read that in one remote town in West Virginia seventy-five patients had had their tubes and ovaries removed within twelve months, he thought it high time that conservatism stepped in and cried halt or sought some explanation of this extraordinary state of things.

As to the case which he had recited to-night, even the true nature of which had been questioned, he could only say that if the name of the gentleman who diagnosticated it before he (Dr. B.) saw the patient were mentioned, few would dare express doubt as to his capacity to make a diagnosis. Moreover, the lady whose case he reported was the wife of a physician, and all the facts had been presented clearly and intelligently to him, so that there could be no mistake about the history.

That the discussion following the report of this case should have elicited the clear, consistent, and yet conservative remarks from one so eminently qualified to speak as Dr. Polk, was to him most gratifying. He had brought the case before the Society simply for the purpose of eliciting the opinions of the members, and not as an opponent of radical measures when other means had failed. He wanted to bring out the views of those especially who had had a large experience in laparotomy for the removal of tubes and ovaries. But if all laparatomists held such views as Dr. Polk had expressed, he thought there would be no room for criticism. That they do not, however, is very evident.

Every one of large experience who had watched and treated these cases of pelvic inflammation, as he had done for the past thirty years, must have met with numerous examples of complete recovery by proper treatment, local and constitutional. This patient now felt as well as any lady in the city of Brooklyn; she could take plenty of exercise, menstruated regularly, and there was no tenderness about the broad ligaments or anywhere in the pelvis. Hers was undoubtedly one of those cases of salpingitis which, as Dr. Polk had clearly stated, were curable by judicious treatment other than that of sexual mutilation.

DR. DUDLEY inquired of Dr. Polk whether, in the operative measure which he had suggested, he fastened the tube up to the abdominal incision.

DR. POLK replied that he had so fastened the tube in his first case, but in the future it would be better, he thought, to attach only that structure joining the tube with the ovary to the abdominal wall at the inside of the wound, fastening the sutures in such a way that they could be cut externally and the tube be set free at the time when it was thought proper to remove the iodoform gauze which had been introduced to shut off the tube from the other abdominal contents. This procedure might not prove successful in permanently relieving the patient of her symptoms and the physical conditions for which he had suggested it, and its adoption might be attended with some danger, but he thought it was worthy of a trial, since it offered a chance of saving those organs which constituted a characteristic of the sex.

DR. WYLIE wished to add that his remarks had not been directed particularly against Dr. Byrne's criticisms, for those criticisms had not been so severe nor apparently intended to be so personal as some offered by certain members of the Society at recent public discussions.

Meeting of February 4th, 1890.

The President, J. E. JANVRIN, M.D., in the Chair.

DR. P. F. CHAMBERS read a paper on

A CASE OF OBSTRUCTION OF THE BOWELS DUE TO A TUMOR OF THE SMALL INTESTINE.

Mrs. W. came under my care January 18th, 1890, and gave the following history: Age 41 years; married twenty years, and had had four children; menstrual history normal.

In 1876 she came to New York to consult Dr. Thomas with regard to the propriety of an operation for the removal of an abdominal tumor; but, for reasons now unknown, the doctor deeming an operation unadvisable, she left for her home in the far West. Two years later she was sud-

denly seized with violent abdominal pains, followed by an attack of peritonitis; and as the tumor disappeared, it was supposed to have ruptured. She made a slow recovery, but, until five years ago, enjoyed good health, when she began to notice a return of the enlargement. In February, 1886, she returned to this city to consult Dr. Thomas, and, as he advised an operation, she was at once admitted to the Sanatorium. A cystic tumor of the left ovary, twenty-five pounds in weight, was removed; and as the right ovary revealed cystic degeneration, it was also removed. She made a perfect recovery, and on March 10th, less than a month after the operation, she left for home. As there was nothing in the nature of the tumor to make us suspect malignancy, no pathological examination was made. She has not menstruated since removal of tumor, and, as far as the pelvic organs are concerned, has had no uncomfortable symptoms. One year after the operation she had typhoid fever, which prostrated her exceedingly, but after her recovery she remained in perfect health up to last September. On the 15th of that month she began to have slight pains in the upper part of the abdomen, and to be troubled very much with constipation. Very little attention was paid to it, however, until October 21st, when she again, as five years before, was taken with very violent pains, followed by a severe attack of peritonitis and vomiting of fecal matter. Her trouble was diagnosed as the passing of gall stones, with which she was affected. She was confined to her bed until December 1st, when her physician, detecting the indications of pus in the line of the old incision, made an opening, from which about a pint of fluid of dark, glutinous material escaped. She was at once very much relieved, and for a while supposed her trouble to be at an end; but as the wound remained open, the discharge, though of a lighter color, still continued, and the pain grew worse, she decided to return to us.

Dr. Thomas, in consultation with Drs. Du Bois, McCosh, and myself, decided to at once enlarge the incision made by her physician, and by an exploration with the finger to then determine what next to do. As we found, however, only a tortuous track, leading we could not tell where, but in no way connected, as had been feared, with the intestines, we were at a loss to explain her symptoms, until by a more thorough examination we detected a tumor in the abdominal cavity. An incision was then made above the original opening, and to our amazement a large quantity of glutinous material poured out, and then a tumor the size of a child's head, nodular in shape, and free from adhesions with the exception of its lower surface, was easily turned out, but with it came quite a knuckle of small intestine to which it was adherent. By gentle traction and use of a sponge the adhesions were torn loose, there being no other pedicle. The hemorrhage was controlled, only a few catgut ligatures being required. An examination of the surface from which the tumor was removed revealed, however, another tumor, about the size of a walnut, buried in the intestinal wall and producing an almost complete occlusion of the passage. To have dissected it out would necessarily have made an ugly opening into the gut, consequently it was considered safer to open the tumor, empty it of its contents, and then remove or destroy its lining membrane. The pressure being relieved, the occlusion instantly disappeared and the gut assumed its normal shape and size. The abdominal cavity was then thoroughly washed

out with hot water, and two drainage tubes—one of glass down to the site of the intestinal lesion, the other of rubber for deep drainage—were introduced and the cavity closed. Iodoform gauze was packed into the old sinus below. The discharge having ceased on the second day, the drainage tubes were removed, and by means of a mild enema the bowels moved on the third day. The patient has improved steadily since the operation, and now, on the tenth day, she is anxious to sit up; the vital signs are normal, and she is feeling better than for months past. No nausea, pain, or eructation of gas since operation.

The points of special interest in the case are the recurrence of the tumor four years after the first operation, its nature, and especially its location, together with the fact that the attack of peritonitis last October was undoubtedly due to the rupturing of one of the cysts of the tumor, and a portion of the material, having become encapsulated by inflammatory adhesions, worked its way towards the point of least resistance, and finally found an exit in the line of the old incision; a proof of the latter assertion being that the fluid found in the tumor removed in the abdominal cavity and in the sinus was the same, and that since the operation the sinuses have closed and there has not been a particle of discharge.

The location of the tumor was on the small intestine about three inches from the ileo-cecal valve; the remainder of the intestines and omentum seemed in a perfectly healthy condition, the tumor growing as a fungus, affecting simply that portion of the intestine from which it grew.

The prognosis is, of course, very doubtful, especially as it was impossible for us to destroy the site from which it sprang. Why the disease, whether malignant or not, should have attacked an apparently healthy intestine, far away from the original location of the disease, instead of the pelvic organs—which, by the way, were healthy—we are unable to state.

DR. PRYOR inquired if an examination had been made of the first specimen, and, if so, whether the growth was found to be papillomatous.

DR. CHAMBERS replied that he did not examine it. There was nothing about it, however, he stated, to make him suspect that the growth was malignant.

DR. PRYOR said that, had there been, the case would have been similar to one which he had seen, in which there was a papillomatous growth which had its origin in the hilus of the ovary. He believed that such neoplasms were malignant, and that they were almost sure to recur after removal.

DR. CHAMBERS said that it was impossible to decide at present in regard to the nature of the growth, as he had not yet received the pathologist's report in regard to it.

DR. BUCKMASTER said that, with all due deference to the position and experience of Dr. Thomas, if the case had been his own he would have punctured the tumor through the intestine, and thus obtained drainage into the latter.

DR. CHAMBERS said he did not think Dr. Buckmaster would have done so if he could have seen the case. Under the existing circumstances, indeed, such a course would have been impracticable.

DR. DUDLEY asked what was the character of the fluid contained in the tumor.

DR. CHAMBERS replied that it was thick and gelatinous.

DR. PRYOR said he was inclined to the opinion that, in this case, there was a direct transplantation of those peculiar cells which are known to proceed from the hilus of the ovary, and which do not originate in the general tissue of the organ.

DR. DUDLEY said that the question of diagnosis here was a grave one.

He did not believe that the growth was papillomatous, for the reason that had it been of this character it would have developed earlier after the preceding operation. As far as he was able to judge, it was simply a cyst of the peritoneum which had become altered and changed the character of its fluid. Such growths, in his experience, were the result of peritonitis and encapsulated fluid. He remembered a case (the first in which he operated) where the ovary came out without any trouble, yet a small quantity of fluid escaped into the peritoneal cavity. In this instance the ovarian cyst was multilocular, and, as a result, there followed diffuse sarcoma of the pelvic cavity within five months after the operation. Lately he had had another case, in which he had performed a second and a third laparotomy, where there was a small perforation of the intestine, and, as a result, there had followed encapsulated cysts in the intestine. He would regard Dr. Chambers' case as of this nature, at all events until the pathologist had sent in his report.

Dr. PRYOR remarked that just how long it took for these secondary growths to manifest themselves he could not say. In the only case in which he had been able to make such an observation, the growth did not make its appearance until the year after.

Dr. BUCKMASTER said that a single word was sufficient to disprove the correctness of Dr. Pryor's position. The second tumor would not have contained glairy fluid under the circumstances named. This was formed only in mixed tumors. Moreover, papillomatous growths were known to be extremely fatal, and hence the long time that had elapsed was against such an hypothesis.

Dr. PRYOR said that, as to the fluid, he had not met with many cases of the kind referred to, but, in those which he had seen, the fluid was always thick and, in most cases, mixed with blood. The kind of growths to which he alluded were multilocular ovarian tumors with papillomatous growths within.

Dr. DUDLEY said that his experience with papillomata had been considerable, amounting, perhaps, to twenty cases, and in all of these the development of the growth had been very rapid. He had never met with a single one in which the growth was circumscribed as in Dr. Chambers' case, nor one in which the growth appeared so long after the primary operation. Accompanying such tumors he was accustomed to see diffuse spots of papilloma scattered about the peritoneum and intestines, and also thickening of the peritoneum.

In closing the discussion, Dr. CHAMBERS exhibited a diagram illustrating the position of the tumor, and said that in his case no other growths could be detected anywhere. It would certainly be strange if the growth were of the character suggested by Dr. Pryor, because it appeared no less than twelve years after the original rupture mentioned in the report, and four years after the operation. The last tumors found were multilocular, and he had an idea that one of the cysts ruptured last September. The material seen floating around the abdominal cavity was the same as that in the cyst. The intestinal tract was filled with the same material, and they could find no other. He supposed that there had been a small opening into the abdominal cavity. So far as either his or Dr. Thomas' experience went, the case was a unique one. The most questionable thing about it was the recurrence of the tumor at the site of the small one that was formerly removed.

Dr. WM. R. PRYOR reported

A CASE OF PORRO'S OPERATION.

My patient was 42 years of age, perfectly formed, and pregnant for the first time after eighteen years of married life with two husbands. She was sent to me by Dr. Sims, he having examined her and pronounced her "simply pregnant." I made several examinations during the three months I attended her, but considered her a normal case. She gave me a history

of uninterrupted health, free from menstrual pain, etc.: in other words, she had never known a 'sick day which she could attribute to uterine trouble. I examined her a month before the operation, and here is what I found:

In the right iliac fossa, high up, a smooth, hard, rounded mass, the cervix being to the left a bit; this mass I took for a fetal head. In the left groin, producing on the abdomen quite a protuberance, was another rounded mass. Here the patient insisted she felt life most vigorously, and this prominence I attributed to the breech of the child, whose head I felt in the left vaginal cul-de-sac. High up, occupying the site of the right uterine cornu, was another irregularity, which I diagnosed as being the breech of another child whose head was planted against the trunk of the first. My patient went through her pregnancy without a disagreeable symptom, and gained steadily in flesh and strength. On October 19th I visited her, examined her, but found the uterus still high up. On the 21st she sent for me, saying she had some slight pain in the abdomen. I examined her, and found that the uterus and the supposed head had descended somewhat, but was still hard to reach. That night she was perfectly comfortable and slept well. On the 22d I visited her in the morning and found her free from pain, but with a discharge of creamy matter, no odor. As I found the cervix to be but a pin-hole, and as I became suspicious as to the cause of the discharge, I put her on the table in Sims' position. But so dark was the day that I was unable to even see the cervix. I told her that I feared she had either a sloughing fibroid discharging into the uterus, or else that what I took for the fetal head was an old pelvic tumor emptying its contents through an opening which I could not find. On the 23d I gave her ether in the morning, and dilated the cervix first with Sims' instrument and then with Briddon's bags until I could get two fingers into the cervix. I determined that the rounded mass was a fibroid tumor, and I could feel, high up, the extremities of the fetus in the left iliac fossa.

I will state that, to so slight a degree had the uterus descended, I was forced to introduce my whole hand into the vagina in order to reach the child's arms in the left iliac fossa. The left cervical wall was exceedingly thin, so much so that I dared not dilate sufficiently to deliver.

In the afternoon, after she had recovered from the ether, I told her what I had found, and advised a Cesarean section. I asked for counsel. Next morning, the 24th, Dr. Lusk saw her with me. He examined under chloroform. Mark you, all this time she had had no labor pains, even after my dilating. Dr. Lusk confirmed my diagnosis, and I set the 27th as the day for operating. I saw her again this night, found her free from pains, pulse 84, temperature $99\frac{1}{2}^{\circ}$ by mouth. During the night she had a good deal of pain, and the nurse gave her a suppository of morphine. The morning of the 25th she had a flushed face, temperature 100° , and pulse 100. I at once ordered her removal to the hospital; she went there that afternoon. On the night of the 25th her temperature was $100\frac{3}{8}^{\circ}$, pulse 130.

Now for the first time I noticed a disagreeable odor to the discharges. So then, on the night of the 24th, I left my patient cheerful, up out of bed, with no pains whatever except just above the left crest of the ilium, with a normal temperature and pulse.

I operated at 9 o'clock next morning, my patient having a temperature

of 98° and pulse of 100, and being deeply jaundiced. Her abdomen was swollen and tender.

Operation.—I will not go through all the phases of the operation I performed. In the main, after the first few steps, it was identical with one for large uterine fibroid. I began the operation, expecting to do a Cesarean section. After the usual long abdominal incision I entered the peritoneal cavity, eviscerated the uterus, and kept back the bowels with a large, flat sponge. Large flakes of lymph were scattered over the uterus, and in places the guts were matted together by tender masses of lymph. A good deal of serum escaped when I lifted out the uterus. The uterus looked perfectly regular and free from fibroid projections. But low down in the pelvis I found the mass of fibroid material which early in the pregnancy I had supposed to be the fetal head. It was about as large as one's two fists, oval in shape, and occupied a position relative to the uterine walls about opposite the os internum.

I have stated that my examination under ether revealed the fact that the tumor projected into the uterine cavity in such a way as to make a very thick cervical wall on one side and a thin one on the other. I next commenced my uterine incision. The first two strokes of the knife entered two fibroid masses, each two inches across. These were essentially interstitial and did not show on the surface. They were directly in the median line and about one inch apart. Forcing one finger into the cavity of the uterus, I discovered at once the source of the fetor. I then rapidly slit down the uterine wall, took out a rotten child, and amputated the uterus just above the capsule of the fibroid in the pelvis. I used the wire *écraseur* for the enormous stump. The abdominal cavity was washed out with boracic acid solution and the wound closed around the stump. I introduced a glass drainage tube; this I did because I operated while the patient had septic peritonitis. In six hours after the operation the stump began to ooze on the side of the fibroid. This necessitated tightening the *écraseur* and applying the Paquelin cautery. My patient was fed and stimulated by enemata. She did not take two ounces of fluid by the mouth, and no morphia was necessary until the third day. She died from septicemia exactly three days after the operation.

Many interesting points arise in reviewing this history and operation.

To begin with, I waited too long. But even had I operated the day I made my diagnosis, I still think I would have found a decomposed fetus and a septic uterus. And now as to the operation I chose. Suppose I had operated early—before the death of the fetus—should I have selected the Cesarean operation? Because this woman had a large interstitial fibroid at the cervix, I think a simple Cesarean operation would have been incomplete. Something would subsequently have to be done for the fibroid. In such a case I most certainly would remove the ovaries and so much of the tubes as possible in addition to the Cesarean section. But the uselessness of doing a Cesarean operation, or even considering it, in my case was forcibly illustrated the moment I cut into the uterine wall. I opened into two fibroids which did not show on the surface. These at once bulged out of their capsules beyond the level of the uterine incision, and would have rendered impossible close and accurate adjustment of the cut edges.

Had I on the 18th determined upon a Porro, without for a moment considering the Cesarean operation, I might have saved my patient. I know that my consultant and myself differ on this point of selection of the proper operation. But given a case like mine, where it is possible to make a pedicle outside the capsule of a fibroid, I believe the Porro to be the one operation to consider. This is most surely so in this case.

When I introduced my hand into the uterus near the fundus, I grasped a leg and extracted the breech. The uterus at once contracted just above the tumor, so as to grasp the head firmly, requiring some little force to complete the delivery.

The placenta was attached to the left side of the uterus just above the fetal head and opposite the upper border of the tumor. It was here the patient first complained of tenderness. I delivered the placenta before amputating the uterus.

Having concluded the report of this case, DR. PRYOR stated that, about three weeks before, he was called to see one that was almost identical, except that an operation was refused, and the patient died in thirty-six hours.

DR. BOLDT said it seemed to him that in any case where sepsis already existed it was hardly possible that there should be a question as to what form of operation should be performed. Even without the presence of the fibroids, Cesarean section would have been attended with the greatest risk. Even in cases where we had no septicemia existing, or in osteomalacia, or any condition which would indicate to leave the uterus in place, the Porro was the preferable operation. The fibro-miomata in the uterine wall which had been cut into in this case were very small, and it would have been interesting to examine them histologically. The examination of the large tumor would not have afforded any satisfactory results. He thought Dr. Pryor waited too long before resorting to operation.

DR. BUCKMASTER said it seemed to him that one important point had been left out of the history of the case, and that was the evidence afforded by the fetal heart. If, when Dr. Pryor mistook the fibroid tumor for the head of the child, he had listened for the fetal heart, and not heard the sound most distinct in the position where it ought to have been with the head in the situation named, it ought at once to have excited his suspicions that all was not right. As to the operation selected, he thought Dr. Pryor had done wisely, though possibly the Müller-Porro operation would have been the best under the circumstances.

DR. BOLDT said that the fetal heart could not be relied upon. Thus, in a somewhat difficult obstetrical case which he had been attending that day, he heard the fetal heart distinctly in the morning, while in the afternoon it could not be heard at all. This was due to the fact that there was so much gas and gurgling in the intestines that the noise prevented the sound of the fetal heart from being heard. In consequence of this failure to detect the fetal heart, he came to the conclusion that the child was dead, but it was afterwards born alive.

DR. BUCKMASTER said he thought Dr. Boldt's case was hardly relevant. His idea was that the fetal heart should be listened for *before* labor, and then if it could not be heard the physician ought to suspect that something was wrong.

DR. PRYOR stated that he had several times examined for the fetal heart in his case, but had never been able to get it. The expected time for the labor was on the 6th of the month, but it was on the 14th that he operated. As to the fetal heart, neither Dr. Lusk nor himself was able to make the diagnosis until after the patient had been anesthetized.

In reply to a question by Dr. Chambers, DR. PRYOR said that he used rubber tubing first and then the cæraseur, and that there was no bleeding.

DR. CHAMBERS asked Dr. Pryor why he had not removed the entire uterus.

DR. PRYOR replied that the patient was in such a bad condition that he was obliged to operate as expeditiously as possible, and he did not think he would have been justified in taking the time that would have been required for the complete extirpation of the uterus.

DR. CHAMBERS said that, although he had not met with a case just like the one under discussion, his results in other cases had been much better where he removed the whole uterus than where he left a portion of it. When complete extirpation was practised, the chances of sepsis, he believed, were much less than when the écraseur was employed and a stump left. The removal of the whole uterus was neither a long nor difficult operation.

THE PRESIDENT inquired how much of the uterus was allowed to remain in this case.

DR. PRYOR replied, only so much of the uterus as was below the os internum.

DR. CHAMBERS said that in the hospital it had been found next to impossible to prevent sepsis in cases where the écraseur was used and a stump left. Almost invariably septic material made its way down beside the wire of the écraseur into the pelvic cavity.

DR. GOFFE said he thought Dr. Chambers was right. It was not a difficult thing to remove the entire uterus, and in this case he believed it was a serious mistake to leave the stump. According to the report read, there was no rise of temperature until the third day, and it seemed to him that, in all probability, the trouble came from the stump.

DR. MORRILL inquired how long after the rupture of the membranes it was that the diagnosis was made.

DR. PRYOR replied that there was no distinct history of this occurrence as commonly understood. One day there was a slight discharge, the next there was a little more; and on the third day he examined her.

DR. MORRILL said that this case was very similar to one which he had seen recently with the President, Dr. Janvrin. He believed that in any case where there was a uterine fibroid and a septic condition, and where the fetus and placenta could not be removed, hysterectomy should be resorted to very early.

DR. DUDLEY said he thought that one or two very important points had been overlooked. Dr. Pryor had stated distinctly, in the report of the case, that there was a septic peritonitis at the time he operated. The child had no doubt already been dead some time. In the case of a patient with a weak pulse, it was pretty difficult to say just what one ought to do. Complete hysterectomy was very difficult to perform in a pregnant uterus, on account of the hemorrhage, and, unless it was possible to get the uterus out, he should prefer the Cesarean section to leaving a stump. He did not think this procedure was contra-indicated by the small fibroids referred to, for the reason that a section of the uterus could easily have been taken out, and in this way the sepsis could have been kept out of the peritoneal cavity. The fatal mistake in this case was unquestionably the delay. Cesarean section, he believed, would have been much easier under the circumstances than hysterectomy.

DR. MURRAY said that this case recalled one which the President had seen with him, where there was a uterine fibroid similar to the one in Dr. Pryor's case. Premature labor was induced and the fetus taken out. It was impossible to push the uterus up out of the pelvic cavity, and the question came up whether or not to let the patient go on to full term, and then perform either Cesarean section or Porro's or Freund's operation. From Dr. Pryor's statement it appeared that he did not hear the fetal heart at all. After the period of viability had been reached, one ought always to be able to distinguish the sound of the fetal heart, and at the fifth month it should be possible to diagnose the presentation certainly, and often the position also.

As to the operation performed, he believed that Dr. Pryor did as well as he could under the circumstances. The condition present was one of those low forms of sepsis in which the temperature does not rise, and where there is always purulent and very marked septic exudation. He thought

that just as soon as the time for labor had passed and the discharge was noticed, he should have suspected a dead child. The difficulty of operating in such cases was very great. In a Cesarean section a few days ago he had met with great difficulty in controlling the hemorrhage. In the present instance he thought the case would have done as badly with complete hysterectomy.

DR. GOFFE said that it seemed to him that this would have been an advantageous case for complete hysterectomy. The uterus was situated very high up, so that the doctor had difficulty in reaching the cervix; and this operation was therefore indicated on account of the facility with which the ligature could have been applied.

THE PRESIDENT said he would certainly have made the attempt, he thought, with the uterus in the condition in which it was, to remove the entire organ with the fibroid, simply because such a course offered the best assurance against any redevelopment of septic trouble. The case which he saw with Dr. Morrill was very similar to this. They urged upon the parties interested the propriety of hysterectomy; but they persistently protested against doing anything but curetting and washing out the uterus.

DR. PRYOR said that, as to Cesarean section, he did not see how union could have been obtained, on account of the presence of the fibroids mentioned. The temperature never was high, and did not rise to over 100½° F. until two days after the operation. The one bad symptom was the rapid pulse. As to future trouble resulting from the fibroid, he hardly thought that was worth taking into consideration when it was remembered that the ovaries and tubes were, of course, removed with the fundus. In the operation strict antiseptic precautions were observed, and the stump was padded with dry bichloride gauze. The question arose: Shall we ever do Porro's operation? One said yes, on account of the danger of sepsis; and another no, on account of the danger of sepsis. For himself, he did not think the Freund operation an easy one when we had a pregnant uterus to deal with, and under all circumstances the mortality from this procedure was very great. He did not believe that in his case sepsis was brought on from the stump. The jaundice and the high pulse rate would rather indicate the presence of infection at the time the operation was performed. One point strengthening this view was the enormous quantities of urine passed by the patient, showing that she was endeavoring to eliminate the poison from her system.

OPERATION FOR STRANGULATED VENTRAL HERNIA IN A WOMAN NINETY YEARS OF AGE.

DR. A. P. DUDLEY related the following case: Nearly a fortnight ago, about 6 P.M., he was called by his friend Dr. W. Schoonover to see an old lady who was suffering from strangulated ventral hernia. She was 90 years old, and exceedingly fleshy, weighing over 200 pounds. The hernia had become strangulated that morning. During the day Dr. Schoonover had tried ineffectually to reduce it by means of taxis, cold packs, etc., and in the evening he came for him. The patient lived in a tenement house on Third avenue, and he found her to be the subject of an enormous ventral hernia. All efforts to reduce it failed, because the woman was so enormously fat and the tumor contained the omentum, while the intestines had made their way out into the cellular tissue beneath the omentum. There was, therefore, nothing left to be done but an operation. The result of this was somewhat problematical, however, on account of the patient having an intermittent pulse and a weak heart, rendering the administration of an anesthetic a hazardous procedure. He made an incision about 5 inches long over the centre of the protruding mass. As soon as the skin had been cut through, a quantity of limpid fluid escaped from the sac. On finding the stricture

he had to cut for $1\frac{1}{2}$ inches before the tumor could be reduced. The intestines were dark and mottled, but not gangrenous. They were kept covered with hot towels while he removed the adhesions about the omentum. After returning the intestines he was not able to get the omentum back, and he therefore removed it, using catgut ligatures. He then closed the incision with silver wire, and put the old lady to bed. He was glad to find the heart acting better than before the operation. He ordered half a Seidlitz powder to be given every two or three hours until the next morning. At the commencement of the second day she was given two compound cathartic pills.

She had no tympanites, no peritonitis, and no fever. She took sufficient nourishment, and the pulse acted very well until Sunday afternoon (the operation was done Thursday evening), when she showed some signs of weakness. Dr. Schoonover was called in, and gave her some carbonate of ammonia. This, unfortunately, caused nausea and vomiting, and in the act of retching she suddenly died.

It was impossible to obtain an autopsy, but he felt sure that some part of the heart had given way. At the time of her death she was practically convalescent from the laparotomy. The case was rather unique on account of the great age of the patient. On a lady of 74 he had once operated successfully for strangulated femoral hernia.

There was one point of interest to which he wished to call attention. For the past year and a half it had been his invariable custom to give laxatives after the first twenty-four hours succeeding an operation for intra-abdominal disease. In this case he thought it necessary to begin their administration at once. Dr. Dudley said he was quite positive that some part of the heart must have ruptured as a consequence of the exertion caused by the retching, and he only regretted that it had not been possible to make an examination of the heart. In almost all these cases of strangulated ventral hernia he had found that the trouble was due to the omentum occupying the sac and being adherent to it. It was a question, in his mind, whether it would not be better to operate early in life, even when the hernia was reducible.

DR. BOLDT said it had been his experience that after operations for ventral hernia patients are more apt to die than after operations in other varieties of strangulated hernia.

Stated Meeting, February 18th, 1890.

ROBERT A. MURRAY, M.D., *President pro tem.*

DR. H. C. COE sent the specimens, with notes which were read by Dr. E. H. GRANDIN, as follows:

A SECOND FATAL CASE OF LAPARATOMY FOR INTESTINAL OBSTRUCTION
FOLLOWING VAGINAL HYSTERECTOMY FOR CANCER.¹

DR. A. P. DUDLEY thought the questions raised in the paper were very important ones, and he should like to hear them discussed, but he had not himself had time to give them thorough consideration. He would, however, express his views as far as he had formed any. In the first place, he did not think Dr. Coe's two cases offered any contra-indication to the ope-

¹ See original article, page 469.

ration at all. It was possible that the obstruction was due to the fact that the intestine was allowed to prolapse at the time of the operation, and was not put fully beyond the site of the operation before the patient was returned to bed.

He could not quite agree with him that there was no peritonitis, for had there not been there also would have been no adhesion.

It was his belief—although in expressing it he disagreed with the majority of men who had performed vaginal hysterectomy—that the operation could be done with less danger of accidents if the patient were in Sims' position. It might be a little more difficult to perform with the patient in that position, but it was attended with fewer dangers. First, the danger of prolapsus and injury of the bladder, when one cut through the vesico-vaginal septum, was much less. With the patient in Sims' position, and a sound in the bladder, this viscus could be held at quite a safe distance from the knife; whereas, with the patient in the usual position, it was not uncommon for the operation to be followed by vesical fistula. Again, in the Sims' position the abdominal organs gravitated away from the pelvis, intestinal prolapse did not take place into the wound during the operation, and less blood went to the uterus. The force which the patient exerted during the act of coughing or vomiting expended itself in a different direction from that in which it was observed to take place when she lay upon her back.

Then the more he performed vaginal hysterectomy and laparotomy, the more firmly he became convinced of the advantage of keeping up the vermicular action of the intestines in preventing adhesions. He could not answer the question why the patient suffered so severely from shock after a secondary laparotomy. He did not remember to have seen a case in which the patient had done well after the second operation. He was disposed to think it was due more to the effects of the anesthetic than to shock, for it seemed to take some time for the patient to recover from the effects of the first prolonged use of the anesthetic. He said he had some further views upon the subject, which he might express after the reading of the next paper.

DR. FLORIAN KRUG said it was certainly true, as Dr. Dudley had stated, that gravity came into play when the patient was in Sims' position, and prevented the intestines from coming down so readily as when she was in the lithotomy position; but he thought there was one important objection to it, namely, that air entered the vagina, and made it likely that the vaginal discharges and particles of the carcinomatous mass would enter the abdominal cavity. It was an extremely difficult task to thoroughly disinfect the vagina before hysterectomy for carcinoma of the uterus. Therefore, rather than perform the operation in Sims' position, he would take the risk of the intestines coming down into the wound. They could, in fact, be readily held back by a sponge, and afterward by a tampon of iodoform gauze.

The question had been raised whether there was any defect in the technique of the operation, and in this connection he said he would admit to prejudice against the use of clamps in vaginal hysterectomy. He had done the operation seven times, and had always been able to ligate, excepting in the fourth case, in which he put on clamps because the ligatures slipped as they were applied. This was the only case which he lost out of the seven. He had always felt, in leaving clamps on, that it was unsurgical and that something remained unfinished. In amputation of the leg, or any other operation, one did not think of leaving a clamp on an artery where it was possible to apply a ligature. He thought it was only where a ligature could not be applied that it was justifiable to leave a clamp. Even if a little more time was consumed in the operation, it was better to ligate. Clamps tended to pull down the funnel-shaped infundibulum after excision of the uterus, elongate it, and make the intestine more likely to prolapse in spite of the use of iodoform gauze. Then one did not wish to leave them on longer than was absolutely necessary, and if they were taken off within twenty-four to forty-eight hours there was liability to secondary hemor-

rhage. In a good many cases, also, they had caused gangrene of the labia, even though left on but as short a period as twenty-four to thirty-six hours.

He said he fully agreed with Dr. Dudley that it was good to administer an aperient as soon as the patient came from under the influence of the anesthetic. He also agreed with Dr. Dudley in the statement that the large mortality after a second operation was due chiefly to the anesthetic. Few of these patients could stand the effects of narcosis twice in rapid succession.

DR. J. R. GOFFE said he had had no experience with vaginal hysterectomy, and the two cases of fatal intestinal obstruction following that operation related in the paper gave no encouragement to resort to it in the future. He had recently reported a case to the Society, and referred to others, in which he showed the advantages of removing fibroid tumors by laparotomy, taking out the whole of the uterus except a bit of the cervix, covering this over with peritoneum, and thus leaving a smooth peritoneal surface to which adhesion of the intestine could not take place and cause obstruction. Of course, in the operation which Dr. Coe had done, it was absolutely essential to remove the cervix along with the body of the uterus, in order that no cancerous tissue should remain.

DR. GRANDIN said he wished to say a word on this subject, although he would expose himself to the charge made by Dr. Tait, that too often criticism came from those who had had no practical experience with the subject which they were criticising. What he had to say would be what Mr. Tait had called "library remarks," for he had never done the operation, although he had seen it performed and had studied the statistics of foreign and American operators. Dr. Coe had asked, Was there any way of avoiding these complications? Dr. Grandin replied, Yes—by not doing the operation at all where the disease was limited to the cervix. He repeated, limited to the cervix, for he did not wish to be understood as directing his remarks at all to carcinoma of the fundus. If the disease is limited to the cervix, we should not perform vaginal hysterectomy, for the reason that there are other operations which are less disastrous and more efficacious in preventing recurrence. These operations were, first, high amputation as performed by Dr. William H. Baker, of Boston—an operation by which the peritoneal cavity was not entered, and therefore there was no danger of prolapsus and obstruction of the intestine. It was an operation by which all of the supravaginal cervix could be removed with almost no risk to the patient. In the hands of Dr. Baker the operation had given freedom from recurrence for five years in a number of cases, in one for seven and one-half years. As a rule, recurrence took place in from ten months to two years after vaginal hysterectomy. Then, with regard to galvano-cautery, all who had read Dr. John Byrne's recent monograph on the subject must admit that galvano-cautery was far preferable to vaginal hysterectomy in cases of cancer limited to the cervix uteri. He had reported over three hundred cases, seen during a quarter of a century, in one hundred and forty of which the disease was limited to the cervix, and of this number he had kept track of seventy-one. Of the seventy-one, forty-six remained free of recurrence for five years, some for eight, nine, ten, eleven, and one for twelve years. Until those who performed vaginal hysterectomy could show on an average non-recurrence for five years, they should cease to do this operation for malignant disease of the cervix. But when the disease was primarily in the body, or had extended to the body, the question was an entirely different one. Here removal of the entire organ per vaginam was indicated.

DR. KRUG thought that if we were always able to say when epithelioma of the uterus was limited to the cervix, the remarks of Dr. Grandin would have more weight. But we were never able to do that until the uterus had been removed and the endometrium examined under the microscope. If the cases reported by Dr. Baker had all been submitted to a microscopical examination—which he doubted—he would feel more convinced.¹ He felt

¹ Dr. Baker has since stated that the specimens in all the cases were examined microscopically and found to be malignant.

disposed, when he found epithelioma of the cervix, although there seemed to be no signs of disease of the body or of the uterine appendages, to remove the uterus, tubes, and ovaries, just as he would excise the glands in the axilla, although not enlarged, while amputating the breast for cancer.

Dr. H. T. HANKS thought the subject of adhesion of the intestine after laparotomy was one of great interest to all gynecologists; and when it came to the fact that we could not do vaginal or suprapubic hysterectomy in any case whatever without the possibility of that condition arising, he was led to make some remarks somewhat in the strain of Dr. Grandin's. First, however, he wished to state that working in the axilla was very different from working in the pelvic cavity. In looking for a gland in the axilla, one knew exactly where he was, could locate every vessel and see all exposed structures. Not so in the vagina. A year ago he had witnessed vaginal hysterectomy performed very gracefully and very quickly, and he thought at the time it would have been better to perform high amputation, for the body of the uterus seemed not to be involved. Under the best surgical care and nursing the patient recovered from the operation, but died three months afterward in the Cancer Hospital. Suppose high amputation had been performed: our friend would have said that all the diseased tissue had not been removed.

For the last six years he had taught, and had been sustained in the position which he took by Dr. Byrne and Dr. Reeves Jackson, that in five cases out of six he could do as much for his patients by high amputation with the galvano-cautery as could be done by hysterectomy, and could save ten per cent more lives. He had had one patient at the Post-Graduate Medical School, who came for this palliative treatment by the galvano-cautery or thermo-cautery at regular intervals for three consecutive years. Where the vaginal fornix was involved in the disease, hysterectomy could not be thought of; yet such patients under the palliative treatment often continued to live many months, perhaps two years. The patient took five times as many risks of losing her life when she submitted to hysterectomy as when high amputation was performed.

Dr. W. M. POLK thought it was a faulty procedure to do laparotomy for intestinal obstruction following vaginal hysterectomy. It appeared to him one could accomplish through the vagina all that could be accomplished by opening above the pubes. Of course one must take into account the disturbance of the clamps and the hemorrhage which might possibly result. But he believed it had been shown that leaving the clamps on three days was quite long enough to prevent hemorrhage: they were then taken off, and would not interfere with manipulations to relieve intestinal adhesions. Relieving the adhesions by way of the vagina might not give quite as good opportunity for antisepsis as by laparotomy, yet with care little danger need be apprehended from this source. He strongly favored the vaginal method.

With regard to a choice of operations for cancer of the uterus, he thought the position taken by Dr. Hanks a good one, if it could be shown that the disease was limited to the cervix, and that the mucous membrane and walls of the body were not involved. Practically the high amputation did not extend above the internal os, and was not applicable where the disease existed above that point.

He understood Dr. Hanks to imply that, where any of the disease was left after hysterectomy, the operative interference was likely to increase the rapidity with which the disease spread. It was for that reason Dr. Polk thought hysterectomy did not offer advantages at all commensurate with the risks incurred where the vagina itself was involved. He felt that we had yet a good deal to learn about operative measures in these cases. Of course the mortality from vaginal hysterectomy was being brought down to a low point, and it was probable we would in time bring it down to two out of fifty.

Regarding the clamp and ligature, it seemed to him that hemorrhage from tissues below the broad ligament could be much better controlled by the clamp, and it was from these tissues that hemorrhage was to be most

apprehended. The vessels in the upper portion of the broad ligament were easily managed, and here the ligature would answer the purpose. Below, however, it was very difficult to get the ligatures to stay, and the clamps should be used. It was well known that anastomosis was very speedily established between the proximal and distal portions of the tissue involved where the ligature was used, and consequently there would be great danger of passage of the diseased elements beyond the line of excision. That danger was obviated by use of the clamp, for the tissue included in the grasp of the instrument, and a little distance outside, was destroyed and sloughed away.

DR. CLEMENT CLEVELAND then read a paper entitled

LAPARO-VAGINAL HYSTERECTOMY, WITH THE REPORT OF A CASE.¹

DR. POLK inquired of Dr. Cleveland how long the operation was.

DR. CLEVELAND replied, an hour and fifty minutes.

DR. POLK said he had had a case almost identical with this one about a month ago. If there was any difference, the uterus was larger. The disease was confined wholly to the body. The woman was fat, and he therefore concluded to attempt to take it out by the vagina. He wished, as he had no doubt Dr. Cleveland wished when he applied his clamp, that he had not attempted to do the operation in that way, for it proved very difficult. But there being no induration about the uterus, the organ was quite movable, and after applying his clamps he succeeded, by use of the vulsellum forceps and one finger in the rectum, in forcing the uterus low down in the roomy vagina. But after freeing it from its attachments he had difficulty in getting it out because of its great size. He therefore removed it piecemeal. The operation consumed about an hour and fifty minutes.

He was very glad to hear Dr. Cleveland speak of abdominal section in connection with his case, for he had himself thought of resorting to it, but was deterred therefrom because it seemed a risky procedure to attempt to place the blades of the forceps high in the pelvis—high enough to reach the upper portion of the broad ligaments—unless they were guided by two fingers. The use of three fingers would be none too many to avoid risk of a coil of intestine getting between the forceps and the broad ligament.

To illustrate the ease with which this accident could take place, he related a case in which he undertook to remove a fibroma. After making suprapubic section he attempted to pass in a clamp through the vagina and bring the blades together over the broad ligament. Notwithstanding the fact that both he and his assistant were watching the blades carefully, he included about one-third of a coil of intestine in the clamp, and bit a hole into it large enough to admit the little finger.

On account of this danger, he thought that in a case like Dr. Cleveland's it would be better to perform the same operation which one would do in taking out the entire uterus for fibroma—cut right down into the vagina. When he spoke last spring of the operation introduced into this country by Dr. L. A. Stimson, of removing the entire uterus, including the cervix, he mentioned as a part of the procedure the searching for the uterine artery down by the side of the uterus, and ligating and enucleating separately. That was according to the plan suggested by Dr. Stimson, but as a matter of fact it was unnecessary, for one could ligate *en masse* without any difficulty. The reason why Dr. Stimson had laid such stress on the separate ligation of these vessels was the supposed danger of retraction of the peritoneum and consequent dragging of the vessel outside the ligature, and hemorrhage. But in reality where the cervix was taken out in this manner there was no chance for the vessel to slip.

Ligating *en masse* shortened the operation, and brought it within the time which we were justified in employing for these operations. Performed in

¹ See original article, page 502.

this way it took no more time than any other form of suprapubic hysterectomy. Of course it was not applicable where the disease involved tissue outside the uterus.

The simpler, the more direct the procedures could be made, the better, as a rule, would be the results. Certainly the aid of the finger within the abdominal incision would seem to be an advantage in these cases of large uteri. But he would prefer to make simply the suprapubic or vaginal operation where the size of the organ warranted it, and he believed the results would be better.

DR. KRUG said he wished to show a specimen removed by laparo-vaginal hysterectomy, and make a few remarks on the excellent paper read by Dr. Cleveland. The specimen was from a woman 39 years of age, who had been sent to him with a diagnosis of carcinoma of the uterus. He examined her—as it was his custom to do before performing an operation—under narcosis, and found a cauliflower cervix, a large uterine body, and enlarged ovaries and tubes. He tried to pull the uterus down, but the vagina was narrow (it having been eighteen years since the woman had borne a child), and he did not succeed. Two vulsellum forceps were then applied to the cervix and handed to an assistant, while he made examination with the finger in the rectum and found tense ligaments, particularly at the upper part of the broad ligaments, which evidently had been the principal reason why the uterus could not be pulled down. It seemed that it would be impossible to remove the uterus through the vagina; besides, there was enlargement of the tubes and ovaries which might, as far as he could determine, be of malignant nature, and he therefore determined to adopt a new course. Freund's operation did not present itself to him favorably, for he had performed it, after the exact manner described by Freund, in one case of cancer in a patient sixty-five years of age, who died the same day, while in a second case, in which he resorted to Rydygier's modification, operating first through the vagina and finally taking the large uterus out through an abdominal incision, the patient died on the fifth day. With this experience he made up his mind, should another case present itself in which the uterus could not be removed through the vagina, to first open the abdomen, tie off the attachments as far as possible from that direction, take out the tubes and ovaries, and then remove the uterus per vaginam.

This idea was carried out in the present case. The patient's pelvis was lifted high, as in Trendelenburg's position for suprapubic lithotomy, an incision made from about an inch below the umbilicus down to the symphysis pubis, when the field of operation came beautifully into view. Being unable to put the ligature on the outside of the tubes and ovaries, he tied the uterine end and cut them off, and was then able to take them out, although they were firmly adherent to the pelvic walls. The uterus was then lifted, and its attachments tied until he reached Douglas' pouch. Then drawing the walls of the abdominal wound together by a ligature, and applying some hot towels, he moved the patient to the end of the operating table, put her in the ordinary lithotomy position, and completed the operation as usual in vaginal hysterectomy. No clamps were used; ligatures were applied, but with much difficulty. The bowels were caused to move, the first passage taking place the third day after the operation, and the patient made an uninterrupted recovery.

Regarding the name of the operation, he said the term Freund's operation ought to be limited to the exact procedure described by Freund. Then there was vagino-abdominal section, a modification first devised by Rydygier; but he had yet to find a case recorded in which laparo-vaginal hysterectomy (opening the abdomen first and then finishing per vaginam) had been done intentionally from the first. In most cases where the combined method had been adopted, the operator had started out to do vaginal hysterectomy, and made up his mind that it was not safe to proceed further without opening the abdomen. Dr. Krug thought the term laparo-vaginal hysterectomy was first used by himself, and appeared on his cards inviting certain gentlemen to the operation. Where the operation was begun per vaginam, the term vagino-abdominal hysterectomy should be employed.

DR. HANKS said he had recently performed an operation similar to that described by Dr. Krug. He first curetted, and, finding the whole endometrium involved, he afterward started to do vaginal hysterectomy. The patient was placed on her back in the position described by Dr. Krug, an incision was made in the posterior fornix, one also in the utero-vesical septum, so that later his assistants could slip the forceps in and control the uterine arteries. The uterus was large, and he then made an abdominal incision, quickly quilted down the broad ligaments, cut the uterus away, and with his fingers in the abdomen he directed the forceps, introduced from below by his assistant, and controlled the uterine arteries, after which the uterus was separated and removed through the abdominal incision, for it was too large to take out by the vagina. Unfortunately the disease had progressed too far—so far as to have destroyed the anterior wall of the uterus—and the patient died.

He had seen the operation done similarly, readily, and in every way satisfactorily, and he thought it should be attended by good results.

DR. DUDLEY having called Dr. Hanks' attention to the fact that Dr. Krug first made abdominal incision, DR. HANKS said he had expected when he began the operation in his case to make abdominal section, but that for convenience he made the two incisions in the vagina first.

DR. DUDLEY then repeated the advantages connected with the Sims' position in these cases, and replied to the objection offered by Dr. Krug, saying that none of the vaginal secretions or blood entered the peritoneal cavity during the operation, and that there was, in fact, less danger of infection than when the patient was in the lithotomy position.

It was only in unusual cases that it became necessary to make abdominal section. Dr. Cleveland's was one of those cases, for the uterus was filled with pus, and had a section been made of it the peritoneal cavity would undoubtedly have become contaminated. The speaker referred to a case which showed that it was not always necessary to open the abdominal walls in order to remove a uterus of large size. In this instance there were two fibroid tumors, one of either horn, the size of a hen's egg. By sections he was enabled to remove the uterus and tumors per vaginam without any of the secretions entering the peritoneal cavity.

He thought there was a peculiar aspect to the question of whether high amputation or hysterectomy was the more useful operation. Baker's statistics had been quoted over and over again, but he was unable to understand why, if high amputation gave freedom from recurrence for five years, total removal of the uterus and appendages should not give freedom for at least an equal period. If it did not, then he could offer but one explanation, namely, that the secretions were permitted to enter the wound and engraft the peritoneum.

He said that, rather than advocate the extreme operations mentioned during the evening, excepting in cases like that of Dr. Cleveland, in which they were essential, he would prefer high amputation, which was attended by much less risk.

DR. KELLY made a few remarks on some of the anatomical points involved in operations in the pelvis, and on the greater freedom from recurrence, depending on the distance of the incision around the carcinomatous mass.

DR. CLEVELAND, in closing the discussion, said he did not regard removal of the cancerous uterus through the abdominal incision as risky as some of the speakers. Protection could be secured by pressing gauze down back of the uterus, and by irrigation.

He had witnessed Dr. Krug's operation, and had been very much interested in it. The position of the body during the operation was an important one. As Dr. Krug had said, the intestines subsided toward the diaphragm, and gave him no trouble whatever.

Regarding the name applied in his own paper, he was not aware that it was Dr. Krug's, although he had seen it on his cards. Moreover, in making use of it in connection with the case related, he did not mean to leave the cart before the horse, for in the latter part of his paper he had suggested

that a small abdominal incision might first be made in many cases, and vaginal hysterectomy be proceeded with afterward. Referring to Dr. Kelly's remarks, he said he had no difficulty whatever in reaching the top of the broad ligaments with his fingers in this particular case.

DR. POLK said he had had an interesting case of

STRICTURE OF THE RECTUM

a few days ago, in which he enucleated the parts up into the peritoneal cavity and drew down the gut sufficiently to attach it below the removed diseased portion. The point of special importance was the great advantage of iodoform gauze in protecting the peritoneum from infection in cases of that sort. The operation was begun by making an incision anteriorly and posteriorly through the sphincter, then turning it out, it being the intention to use the sphincter afterward. The incision was then carried through the gut into the ischio-rectal space on either side, into the perineal region anteriorly, back behind the coccyx. Then seizing the gut and dragging it gently down, he finally succeeded in pulling the gut down far enough to enable him to stitch the sound portion to the sphincter, while the diseased portion was cut away; but a rent was made into Douglas' pouch, which he closed from the inside of the gut by continuous catgut suture. Being unwilling to rely entirely on that, he tried to close the hole in Douglas' pouch, but found that he had drawn down so much of the gut that the fold of peritoneum attached to the anterior surface of the rectum was too short to admit of this, and he feared to stitch the fascia to the rectal wall because of the danger of the suture entering the gut, and subsequent fecal extravasation. Therefore he simply thrust some iodoform gauze into Douglas' pouch, and obtained a good result. The gauze was removed when it loosened, on the fourth day. There was good mucous membrane down to the sphincter, with only some loss of substance on the anterior wall. Replying to an interrogatory by Dr. Dudley, he said this part would not form a stricture, for the mucous membrane behind would stretch.

As he feared, the catgut sutures which had been used to close the opening in the gut came away, so that had he relied entirely on them it was pretty certain there would have been fecal extravasation into Douglas' cul-de-sac. It had been necessary to keep the bowels free during the treatment. In a future case he would make an opening between Douglas' cul-de-sac and rectum, and introduce the gauze from that direction instead of as in this case.

TRANSACTIONS OF THE GYNECOLOGICAL SOCIETY OF CHICAGO.

Regular Meeting, September 27th, 1889.

The President, CHARLES T. PARKES, in the Chair.

WHEN DOES AN OVARIAN TUMOR CALL FOR INTERFERENCE?

DR. KARL SANDBERG.—There is probably at the present time hardly any one who would try any kind of medical treatment for ovarian tumors with hope of effecting a cure; and of the different surgical expedients proposed and tried for this malady, ovariectomy, the complete removal of the whole tumor, seems pretty unanimously accepted as the only proper operation.

There are still some advocates of tapping in cases of single cysts, and among them so high an authority as Sir Spencer Wells thinks it should be enforced by almost a refusal to do ovariectomy until it has been tested; but they are certainly very few, and the question may practically be considered settled.

When does an ovarian tumor call for interference? is the next question, and about this there are still very different opinions among the highest authorities. Some operators do not see any indication for interference before the patient's life is in jeopardy; while others think the indication is there as soon as the tumor is discovered. It is worth recording that we meet the most conservative opinions on American soil.

W. H. Byford¹ thinks we should wait until some condition connected with the growth of the tumor begins to affect the health and thereby threaten the life of the patient. Until the life of the patient is jeopardized by the effects of the tumor upon the general health in some way, we have no moral or professional right to subject her to so great a risk as is incurred in ovariectomy.

T. Gaillard Thomas² does not want to interfere with an ovarian cyst until it is evident that the patient is failing in strength and becoming emaciated, depressed, and nervous; only making exception for small cysts that are removable by the vagina. For these he recommends removal as soon as possible. Where the woman is already of a nervous disposition, he recommends earlier removal. As unfavorable conditions for the operation he mentions depression of spirits and extensive and firm adhesions.

P. F. Mundé³ considers it unjustifiable to remove an ovarian tumor which neither by its size, location, nor symptoms seriously distresses the patient or impairs her health or activity, but considers it equally wrong to defer the operation until the patient's constitution begins to suffer. It seems to him the proper time to operate on an ovarian tumor is when the tumor is evidently growing, when sharp abdominal pains lead to the suspicion of localized peritonitis and adhesions, and when the tumor, by pressure, pain, or otherwise, seriously distresses the patient. Occasionally he finds moral indications for earlier operation.

Goodell⁴ wants to operate when the cyst has grown so large as to distend

¹ "Diseases and Accidents incident to Women," 3d edition, 1881, page 628.

² "Diseases of Women," 5th edition, 1880, pages 729-731.

³ "Minor Surgical Gynecology," 2d edition, 1885, pages 414-415.

⁴ Pepper, "System of Medicine," vol. iv., page 316.

the belly, and when the woman has become thin and her health has begun to fail. The reasons for waiting are: The woman will have lived longer, should the operation turn out to be a fatal one; the abdominal walls are thinner; the patient being less full-blooded, hemorrhage and inflammation are not so likely to occur; the bowels are crowded away; the peritoneum is less vulnerable. He, like Mundé, admits that there may be moral indications for earlier removal. When pregnancy exists, he thinks we should operate in the first half of the period of gestation.

Emmet¹ says: All the advantages are now greatly in favor of an early operation, before adhesions have been formed.

Hegar and Kaltenbach² recommend early operation, before the patient's health is seriously affected, but prefer to wait until the tumor has reached the umbilicus, thinking this makes the operation easier.

Schröder³ considers the removal of any ovarian tumor justifiable when it has attained the size of a child's head and is growing, the chances being unusually good when the tumor is no larger than this. The only contra-indication he knows of is where the tumor is malign and its complete removal is impossible. In a case where the tumor has extensive and firm adhesions in the pelvis, or where it is in large part subserous, he thinks it is often advisable to wait until one is sure the tumor is growing; but he warns, at the same time, earnestly against waiting until the patient's strength has begun to fail, because the chances for success are greater the greater the strength.

Olshausen⁴ recommends that tumors the size of a fist always be removed when they have a pedicle and are movable, even if they cause no trouble whatever, on account of the great danger from torsion of the pedicle. Whether smaller tumors should be removed will depend upon how much, if any, trouble they make, and the probable difficulty of the operation. In cases of malignant tumors, he recommends operation, beginning with an exploratory incision, whenever there is no evidence of metastases.

Gusserow⁵ thinks it best to remove even the smallest tumors as soon as discovered. He recommends exploratory incision and removal of malignant tumors, if they can be removed completely.

A. Martin⁶ recommends removal of ovarian tumors as soon as they are recognized, considering that the prognosis is better the earlier they are removed. The only exceptions are malignant tumors not limited to the ovary.

Spencer Wells⁷ says that he has become more and more disposed to advise the removal of an ovarian tumor as soon as its nature and connections can be clearly ascertained, and it is beginning in any way, physically or mentally, to do harm, since the risk of the operation under such circumstances is certainly less and the possible evils of delay are excluded. But further on he declares it possible to operate too early as well as too late, and states that operations for small, unattached tumors in strong, healthy persons have by no means given the best results. He also formulates the postulate that a woman who has become accustomed to the confinement of a sick-room, and has lost flesh, bears the removal of an ovarian tumor better than one in good health.

Thomas Keith waits for some degree of impairment of health and emaciation (Mundé, "Min. Surg. Gyn."), but prefers that the operation shall be performed early and before the general health has become enfeebled (Bantock, "A Plea for Early Ovariectomy").

¹ "Principles and Practice of Gynecology," 3d edition, 1889, page 711.

² Hegar and Kaltenbach, "Operative Gynäkologie," 3d edition, 1886, page 245.

³ "Handbuch der Krankheiten der weiblichen Geschlechtsorgane," 4th edition, 1879, pages 391-393.

⁴ "Handbuch der Frauenkrankheiten" (Billroth and Luecke), 2d edition, vol. II., pages 650 and 652.

⁵ Clinical lecture, February, 1887.

⁶ "Pathologie und Therapie der Frauenkrankheiten," 1885, page 394.

⁷ "Diagnosis and Surgical Treatment of Abdominal Tumors," 1885, pages 38 and 69.

Knowsley Thornton¹ recommends early operation, but prefers to wait until the tumor is pushing the abdominal wall slightly forward.

Lawson Tait's² rule is to remove an ovarian tumor as soon as it is discovered, thinking the earlier the operation is performed the more certain the patient is to recover.

Granville Bantock ends his "Plea for Early Ovariectomy" (1881) in the following words: "I would urge, then, with all the force which the strongest conviction imparts, that ovariectomy should be performed as soon as we can be sure of the diagnosis; believing, as I do, that were this rule followed in only a majority of the cases, the success would be much greater than we are even now able to boast of."

At the present standpoint of abdominal surgery, all talk about the great vulnerability of the peritoneum ought to be silenced, and there ought to be only one opinion about the very small risk of opening the abdominal cavity. This has certainly been proved to satisfaction over and over again by the different operators. It also ought to be conceded as *a priori* logical and furthermore statistically proved that the smaller the tumor, the thinner the pedicle, the fewer the adhesions, and the better the general physical and mental condition of the patient, the better the chances. G. G. Bantock has shown that out of Spencer Wells' 1,000 cases 599 had adhesions, of whom 165 died—giving a mortality of 27.54 per cent; 401 had no adhesions, of whom 68 died—giving a mortality of 16.95 per cent. Consequently the difference amounts to 10.59 per cent in favor of no adhesions, or, in other words, of early operation. In his own 185 cases, the percentage is respectively 20.10 per cent and 5 per cent—making a difference of 15.10 per cent. According to Mr. J. Clay's statistics, of those who had

No adhesions	30 per cent died.
Slight adhesions.....	40 " " "
Extensive adhesions.....	50 " " "
Extensive adhesions requiring ligature.....	70 " " "

Bantock also gives us another table, that speaks for itself, or rather for early and easy operation—a table showing the duration of operation in 183 cases, with the mortality :

Time occupied.	Cases.	Deaths.	Percentage.
Up to 60 minutes.....	137	12	8.00
60 to 80 "	29	6	20.6
80 to 100 "	10	5	50.0
Over 100 "	9	5	55.5

Hereto ought to be added all those cases that die from want of operation, on account of inflammation in or outside of the cyst, bleeding from ruptured blood vessels or gangrene of the cyst caused by twisting of the pedicle, or for other reasons entirely or partly caused by the presence of the tumor. All these cases ought to be added to the mortality of late operation.

Another thing that ought to be taken into consideration is the comparative value of the life of a woman with an ovarian tumor and of one in good health. The life of the first one is always in peril and very often nothing but a burden to her.

¹ "Handbuch der Frauenkrankheiten" (Billroth and Luecke), 2d edition, vol. ii., page 651.

² "Pathology and Treatment of Diseases of the Ovaries," 4th edition, 1883, page 253.

When we consider all these factors, I think it should be agreed that it is bad practice to wait "until the patient's health is affected or her life threatened"; "until she is failing in strength and becoming emaciated, depressed, and nervous"; "until she is seriously distressed and her health or activity impaired"; "until sharp abdominal pains lead to the suspicion of localized peritonitis and adhesions"; "until the belly is distended and the woman has become thin and her health has begun to fail"; "until the tumor has reached the umbilicus"; "until it is beginning in any way, physically or mentally, to do harm, or until the woman has become accustomed to the confinement of a sick-room and has lost flesh."

None of these conditions is required for any other operation, and they are only reminiscences of the time when ovariectomy was considered preferable only to immediate death. The sooner we throw them overboard the better. An ovarian tumor always calls for interference, and it calls loud enough to make additional indications unnecessary.

DR. A. REEVES JACKSON.—The question which has been presented to us by this thesis is not a new one, certainly, but not the less valuable on that account. It is possible that if some of the authors who have been cited were now consulted they would express different opinions from those given. I think that to-day there is not very much difference of opinion as to when an ovarian tumor should be removed. But the point cannot be settled by the consideration of any one factor. Not only the size of the tumor should be taken into account, but the symptoms which it produces, including the mental as well as the physical. I think that any surgeon, whatever his general views might be, would be guided by the symptoms and surroundings of the particular case, and would operate upon a tumor, whatever its size, if it were provocative of serious symptoms. A recent analysis that has been made by the *Pittsburg Medical Review* shows that some of the opinions we have held in regard to ovarian tumors need further consideration and perhaps modification. As many of you know, there have been published in that journal during the years 1887 and 1888 reports of all of the American operations which were sent to the editors, comprising 1,322 cases, nearly 500 of which were laparatomies for ovarian and parovarian tumors. The general mortality during the three years 1866-67-68 was nearly 15 per cent. Those cases in which there were extensive adhesions had of course the larger mortality—nearly 21 per cent. In those in which the adhesions were comparatively slight, the mortality was much less—between 14 and 15 per cent. In those cases in which there were no adhesions, the mortality was only a little over 8 per cent. In 43 cases in which the tumors had been known to exist from four to thirty years, there were only 3 deaths. Surely this fact is an argument in favor of non-interference as long as injurious symptoms do not appear. I have never thought an ovarian tumor should be removed simply because it was an ovarian tumor and discovered. Then, too, there is sometimes difficulty in diagnosis, and this difficulty is frequently removed by the prolonged history of the case. In the early stages we cannot be sure that an ovarian tumor is of cystic growth, and solid ovarian growths do not need such early interference. Operation would of course be imperative in cases in which grave symptoms should supervene—for instance, twisting of the pedicle, repeated attacks of inflammation, whether in the cyst or outside of it. Now that abdominal operations during inflammatory conditions are so frequently successful, this peritonitis would not be so great a bar to operation as formerly. Forty or fifty years ago conservative men did not advise removal of ovarian tumors, generally because of the great mortality, which at that time was not less than 30 per cent, and, if all cases had been reported, would have been shown to exceed 40 per cent. But the same men would not be deterred from operating now, when the mortality is reduced one-half. All the factors

must be considered, and each case decided upon its merits. The continuity of the tumor, its size, the effect of its presence upon the patient's mind and body—all these and many other facts must be considered. I do not think we can formulate any fast rule to guide us in settling this question. In my own experience, tumors which had attained to or exceeded ten or fifteen pounds have been, as a rule, more successfully removed than those which did not exceed one or two pounds. I think there is force in the statement made that those patients who are in apparently full health do not endure these operations so well as those in whom the tumor has made some progress and has begun to affect the general health. But the question, after all, is one that must be decided by the effect of the tumor on the patient.

I would like to make a supplementary remark on the subject of tapping. An authority—I do not remember who—stated many years ago that tapping, which was then very much in vogue, was really more dangerous than the operation of ovariectomy. In the earlier days of my experience I tapped a good many cases of ovarian tumor; but while I seldom resort to the measure latterly, I am not prepared to condemn the procedure in such a wholesale way as Dr. Nelson does. Indeed, I think there are many cases in which tapping may prolong life and render a radical operation unnecessary. In the tabulated statement to which I have referred, a very large number—about sixty, I think—had been tapped, and the mortality in those cases was only two per cent higher than in those in which no tapping had been done. So that it does not add so materially to the danger as has been supposed. There are many cases in which an operation must be postponed; the unwillingness of the patient, her condition otherwise than that connected with the tumor, may make it necessary to give relief, and tapping may produce palliation of symptoms for a long time.

DR. H. P. NEWMAN.—While I would not presume to criticise the eminent authorities cited here to-night, I think the remarks made by Prof. Jackson, as to the necessity of making a special study of each individual case, cannot be too strongly emphasized. I have in mind two illustrative cases. One of these I presented to the Chicago Medical Society about three years ago—a dermoid cyst, about the size of a small cocoanut, which ruptured and caused death in a young woman twenty-five years of age. The specimen was seen by our President, and the cause of rupture attributed by him to a probable twist in the pedicle. The unfortunate termination in this case would certainly be an argument in favor of the early operation. In the second instance I was called to Central Iowa to operate upon a woman, 73 years of age, who had had for twelve years an ovarian tumor. When I saw her the growth was perhaps two inches above the umbilicus and had been tapped several times during the past year, the last time about two weeks previous to my visit. The patient was strong and healthy for one of her years, and I could not determine that she was suffering, or had at any time suffered, in any way directly from the presence of the tumor, except from the inconvenience when it became large. Complete relief from this symptom had always been afforded her by the local physician in tapping. She was well nourished, and during my stay sat at dinner with the family, ate heartily, and seemed to be in perfect health. I did not advise an operation, although the tumor was large and frequent tapping was necessary.

As far as my limited experience goes, the smaller tumors are often more difficult to remove; and I would take exception to the statement in the paper that in large tumors which have risen above the pelvis the pedicle is larger and more difficult to tie. On the contrary, in these tumors the pedicle is apt to become stretched and attenuated, while in the small growths it is often short, ill-defined, and difficult to get at and handle.

DR. A. H. FOSTER.—I have had no experience in ovariectomy, but I was called to a patient in labor by one of our Fellows, to remove an ovarian tumor subsequent to pregnancy. I suppose that is a factor that comes in sometimes; it is mentioned in the paper. I believe our President saw that case repeatedly. I have not heard the result: she was in labor, and I was called just temporarily.

DR. W. E. CLARK.—From my observation I believe that those cases that have been operated upon early have had more favorable results than those where there has been treatment and the operation has been late. I have about made up my mind that as soon as a diagnosis is made of an ovarian cyst, other circumstances being as favorable as possible, it should be operated upon immediately. I am in favor of early operation.

DR. D. T. NELSON.—I have but little to add to what has already been said, and the chief thing I think we should all emphasize is that every case shall be studied upon its own merits. Some cases of very small tumors need operation; some cases of very large ones, like the one referred to by Dr. Newman, do not need operation, especially if it is a patient who is going to die very soon from age, and apparently is not going to die very soon from the tumor. I believe that it will be found to be the experience of all that many small tumors are more difficult to remove than those of moderate size or large size. If there is a question of adhesions, the sooner they are removed the better, before the adhesions begin or are of any considerable number. I think one of the authorities cited advocates the tapping of tumors before their removal. I hope the Society will express an opinion as to that. If, in the opinion of the physician in attendance, there is no need of tapping for diagnosis, I should say never tap an ovarian tumor. In a case like the one referred to, where the general health was not being impaired, where the patient was apparently well nourished and had been tapped before the days of modern surgery and modern appliances in the treatment of these tumors, and adhesions seem not to have been formed by the process, possibly it might be well to continue for a time longer until the general health is more impaired or she die of some other disease. In regard to the question of impairment of general health, I believe none of us will wish for patients in poor health, but all will want patients in perfect health, or as near perfect health as possible. And I think the experience of some who have placed themselves on record in former years, but would not now, is that they prefer a moderate amount of impairment of health, a moderate loss of flesh perhaps I would better say, and a moderate amount of experience in the sick-room modifying their desires and habits somewhat. We want patients in perfect health, but I think some of the most obese patients are not in sufficient health for such operations, and I think we shall eventually, like those training for the ring, reduce the flesh of our patients before we commence such operations. What we call the most perfect health I think sometimes means simply *avoidupois*, means a ruddy countenance and full flesh, which does not necessarily mean to the physiologist perfect functional activity of all the organs; and I think, for so serious an operation as ovariectomy, the patient should be put in the best possible physiological condition as to bowels, kidneys, skin, and every other organ. I believe by so doing we shall improve our patients and improve our records. The condition of all other organs should be noticed most carefully. Every now and then a practitioner has a patient who does badly, and he finds at the autopsy, or in some more careful examination, perhaps, without an autopsy, that there is serious disease of some important organs, like the kidneys or lungs. While this does not necessarily prevent an operation, it should make us careful in operating. I believe we are sometimes justified, in cases with serious disease of the kidney (certainly with serious disease of the heart and extensive disease of the lungs), in operating upon these tumors. The other disease is likely to sooner destroy the patient with the tumor than if it has been removed. I have seen such a case within six months, and I believe the patient has done well so far as the tumor is concerned, but probably tuberculosis will destroy her. Yet I think she will live longer with the tumor removed than with the tumor and tuberculosis. So, as I said, I believe every case must be studied carefully by itself. If we can allow a tumor to grow to be of moderate size, about the size of a fetal head, without gaining adhesions, or serious impairment of the health, or injury to the patient, I should rather have it than a smaller one to remove, and I believe the patient will make a better recovery.

DR. H. P. MERRIMAN.—My idea is that when a woman has an ovarian

tumor she has a trouble that is hurtful from the beginning—it is a cause of ill health, and the longer it exists the worse it is for her. So on general principles I am in favor of removing an ovarian tumor as soon as it is diagnosed, unless there are plain indications against it. There may arise certain questions. One of the first of these would be the question of adhesions; another is certain complications, like inflammations in the pelvis, that may be entirely independent of the tumor; a third question would be pregnancy, and a fourth would be, possibly, the state of health of the woman—it might be best to improve her general condition before the operation was performed.

I reiterate that unless there are objections, unless there are strong reasons for not operating, I believe in removing an ovarian tumor as soon as the diagnosis is certainly made. My own experience is that adhesions have no special relation to the progress of the tumor, and I have seen them just as bad in small tumors as in very large ones.

DR. BAYARD HOLMES.—Mr. President, I would like to refer to the cause of such a high mortality in those cases in which there are adhesions more or less extensive. The mortality in those cases is of course occasionally due to hemorrhage from the blood vessels in the denuded places, but I think that the ordinary cause of death in those cases is sepsis. Some late experiments of Rinne, just published in *Langenbeck's Archiv* (Bd. xxxii., pp. 1-96), would seem to indicate the relation which these extensive adhesions and the necessarily denuded portions of the peritoneum have to death from sepsis. The experimenter injected into the healthy peritoneal cavity of animals considerable quantities of pus from abscesses; he also injected pure cultures of pyogenic bacteria, and did this daily with considerable care, with a small needle. In all cases there was complete absorption of the pus and complete destruction of the pure culture. It was attended by only a transient peritonitis, accompanied by only the most trivial elevation of temperature. But when a portion of the peritoneum had been removed so as to leave the connective tissue exposed, even the injection of very small quantities of pus, or a very much diluted pure culture of pyogenic bacteria, resulted in a protracted peritonitis and a sepsis which invariably proved fatal. These experiments show that the uninjured peritoneum is capable of taking care of a large amount of septic material while uninjured, which is not the case when a focus of connective tissue or denuded tissue of any kind is exposed to infection. The denuded point becomes the seat of infection, and furnishes a constant flow of infection to the peritoneum until the resistance of that organ is overcome and a general peritonitis supervenes. I think that the indication is well stated by Dr. Sandberg. Operation should be undertaken before adhesions are formed, which are shown to be so dangerous in their results.

DR. C. T. PARKES.—I am confirmed in my opinion that, as a general proposition, the presence of an ovarian tumor is a source of danger to the person who has it, and as soon as surrounding conditions can be settled an operation for the relief of the tumor should be done.

I am in accord with Dr. Merriman in reference to small tumors. It seems to me that it depends somewhat upon the method of development of the tumor whether it has a pedicle or not. I am half-way convinced that tumors that have pedicles have pedicles from the first and the pedicle grows with the tumor, and those that are sessile are sessile from the first. Those that are broad in their development at first are apt to be small and confined to the pelvis, and under any circumstances difficult to remove. I think the number of tumors, small in size, which are apt to be found in the pelvis and can be relieved by vaginal tapping, are few. In my experience, most of these tumors have been ruptured cysts that are emptying their contents into the abdominal cavity, where vaginal tapping would be worse than useless, and abdominal section the only means of entire relief. In every case of this kind coming under my care, they have been difficult and have left large spots exposed to the dangers of infection. I think you cannot go beyond the general proposition that the sooner the tumor is taken away the better for the patient, the operation, of course, being preceded by a careful diagnosis. We

can imagine cases, such as those complicated with pregnancy, in which tapping should be done as a relief to the patient, rather than an operation for removal. I think tapping can be rendered perfectly innocuous by antiseptic methods and by care in the removal of the contents. Again, we must not fail to remember that there are many cases on record, in which the most careful of men have diagnosed the presence of an ovarian cyst, where a full and complete tapping has entirely cured the patient, especially in the case of broad-ligament cysts. So where there are no bad symptoms except distention it is justifiable to try tapping alone as a cure. I am inclined to believe that the old method of tapping without antiseptic precautions was a dangerous thing to do; and even now, with antiseptic precautions, one will meet cases in which the cyst fluid is so deleterious that any portion getting out into the peritoneal cavity would be a source of great danger.

There can be no question as to the necessity of immediate removal in the case Dr. Newman mentioned.

There is one point that the paper brought to my mind after Dr. Holmes made his remarks about the dangers of infection from a broken surface. That is when the author makes the assertion that there is no danger in attacking the peritoneum, that the idea that it is at all vulnerable should be dismissed. I do not believe the proposition, and I do not think any man should do abdominal surgery who is governed by that idea. It is vulnerable, and the slightest abrasion of its epithelium opens the pathway to the worst form of sepsis.

If for no other reason than the almost universal presence of the pus microbe, than the great possibility of neglecting the minutest scrutiny of every surrounding during all operations, it appears to me dangerous to advocate the almost total invulnerability of the peritoneum. It is doubtful if any other tissue in the body responds more rapidly, or its response is attended with greater fatality, than the peritoneum to this irritation. Truly, an avoidable infection, but is it likely to be avoided if one believes that the tissue concerned is invulnerable?

DR. T. J. WATKINS.—I think a wrong impression may be given by the quotation from Emmet in regard to this case. Whenever the cyst is confined to the pelvis he is in favor of waiting until it grows to sufficient size to be elevated outside of the pelvis, thereby lengthening the pedicle, unless there is some indication for operating before then. He is also very conservative when there is a suspicion of the cyst being a dermoid; and in a young patient where the cyst has remained a long time and is growing very slowly, and is giving her no trouble, he thinks it is entirely wrong to operate under those circumstances. As you all know, the fluid of the dermoid cyst is very dangerous if any of it escapes into the peritoneal cavity, and I think when the cyst is confined to the pelvis it may be a great mistake to do laparotomy, even though it may be giving a good deal of pain; for after the abdomen is opened it may be impossible to remove it, or if it is removed it is done at the risk of great hemorrhage. If we do not remove the cyst, it is often aspirated or may be punctured and drained from the vagina. In such a cyst, I should be in favor of aspirating first from the vagina.

A CASE OF PUERPERAL ECLAMPSIA.

DR. T. J. WATKINS.—Mrs. W., æt 24, primipara, physique slight. She was of a healthy family, and enjoyed good health until eighteen years of age, when she had typhoid fever, with kidney disease as a complication. Her urine at this time, her physician writes me, was scanty in amount, did not respond well to diuretics, and had to be drawn. It is impossible to ascertain to what extent the kidneys were damaged at this time, but since then until this illness, which is six years, she has suffered from "light sensation in head," from "feverish sensations," and has exhibited a change of complexion, which has become dusky.

She has had no headaches, no visual disturbance, no symptoms referable

to stomach, and no edema, but at times the urine has been voided with much difficulty and has often contained a sediment.

With slight increase of these symptoms for three weeks, she remained otherwise well until about the seventh month of gestation, when her fatal illness became established. She retired feeling remarkably well, for her, and slept until 1 in the morning, when she awoke with severe and constant pain in region of stomach. I then saw her for the first time, July 3d, 1889, and found her writhing with agony. Great tenderness to pressure over region of stomach existed; no abdominal tenderness was present, bowels had acted regularly, and urine had been passed freely on the previous day. Emesis and external applications gave no relief. Morphia sulph., grain one-quarter, was given hypodermatically, and chloroform administered. But as she recovered from the anesthetic the pain returned, no less severe. Temperature was normal. No uterine contractions existed, and the cervix uteri was high up and apparently in the normal condition of seven months' pregnancy. She had no other symptom to indicate a possibility of uremia. After using morphia sulph., grain three-quarters, other antispasmodics, and external applications during an interval of three hours, she became quiet, but two hours later vomiting commenced, followed in one hour by a severe convulsion and coma.

Nine ounces of very dark-colored urine were drawn: reaction acid; specific gravity 1.020; albumin present, about sixty per cent per volume, also granular and hyalo-granular casts; no sugar.

Chloral and bromides were freely given to prevent recurrence of convulsion; a solution of citrate of potash in spiritus mindereri and infusion of digitalis to increase action of skin and kidneys; concentrated solution of magnesium sulphate in glycerin, as an enema, to produce catharsis; and dry cups were applied over region of kidneys.

Although the kidneys secreted seven ounces in four hours, the skin acted well, and the bowels acted freely, yet two more convulsions occurred at two hours' interval. She was comatose much of the time, and became worse as the convulsions increased both in number and severity. Pilocarpine, grain one-sixth, was then given hypodermatically, which commenced to act in five minutes, and profuse perspiration continued for about two hours, with marked salivation, and mucus was vomited and ran from the mouth in large quantities. This delayed the convulsion one hour, but another one occurred after an interval of only one hour. The convulsions were readily controlled with chloroform.

She was again catheterized after an interval of five hours, and three ounces of urine were obtained.

About three hours after the active perspiration ceased, slight uterine contractions commenced, and the cervix seemed somewhat softened and dilated. As the convulsions were more frequent and severe, and as her general condition was becoming worse, even while medication was forced, it was decided to empty the uterus without delay.

With the assistance of the patient's mother and husband, she was anesthetized, the cervix dilated with my fingers, forceps applied, and a dead child delivered. The child was of six and one-half to seven months' development. The placenta was readily expelled. She went into a state of collapse which continued about one hour, when she became quiet and rested well all night.

For six and one-half hours after delivery urine was suppressed, but no tendency to convulsions existed. The following day her intellect was bright, but speech somewhat labored, and she felt well with exception of muscular lameness. She steadily improved until the sixth day, but muscular twitchings, light feeling in head, and albuminuria continued. She then developed other symptoms of uremia and steadily became worse, although the emunctories acted well. On the ninth day the temperature suddenly became 105°, but readily responded to antipyretics and stimulants, and remained about normal until a short time before death, as it had been on the day previous. Uremia steadily increased, respirations became irregular and gasping; she became delirious, and died on the twelfth day from asphyxia. An autopsy was refused.

It is interesting to note that convulsions continued when the emunctories did forced work, and that they ceased as soon as the uterus was emptied. The pilocarpine administered undoubtedly acted as an oxytotic and thus greatly facilitated emptying of the uterus, which procedure, I think, gave her the only chance for recovery.

The case contradicts the theory that retained urinary solids are the cause of puerperal eclampsia, for nineteen ounces of urine were drawn during an interval of ten hours, containing a large amount of solids, yet the convulsions continued at nearly regular intervals until the uterus was emptied. And suppression of urine occurred for more than six hours after delivery, and for sixteen hours only four ounces of urine were secreted; yet no tendency to convulsions occurred.

TRANSACTIONS OF THE OBSTETRICAL AND GYNECOLOGICAL SOCIETY OF WASHINGTON.

Stated Meeting, November 1st, 1889.

DR. JOSEPH TABER JOHNSON, *President, in the Chair.*

The paper for the evening was read by DR. SAMUEL C. BUSEY, entitled

VULVAR OR VAGINAL HEMORRHAGE IN THE NEWLY-BORN.¹

DR. A. F. A. KING, in opening the discussion, said he found no mention of the affection discussed by Dr. Busey in the works on obstetrics which he had consulted. The only account to be found was his own essay on the subject. He thought the hemorrhage might come from the uterus and not from the vulva, or from the bladder or urethra. He had a case some years ago, and, finding no mention of the subject in the books, he called the attention of the late Dr. W. P. Johnston to it. Dr. Johnston thought it of no importance, and suggested no treatment except that adopted by Dr. King, viz., having the parts bathed and kept clean. The case recovered. He thought the causes could not be explained satisfactorily until we understand the effect of labor upon the organs and vessels in the pelvis of the fetus.

¹ See original article, page 495.

DR. MCARDLE stated that he had delivered a case December 25th, and five days later had his attention called, by the nurse, to the presence of hemorrhage from the vulva of the child. He did not determine exactly where the blood came from. It undoubtedly came through the hymen, but he could not satisfy himself whether it came from the uterus or the vagina. There was no turgescence of the vulva at the time of delivery. The labor was quick, without much pain. The mother had some hemorrhage. After delivery the child nursed and seemed well. Cleanliness and bathing constituted the treatment, and in four days the hemorrhage ceased.

DR. FENWICK had seen three or four cases in a practice of twenty years. In his first case he used an alum solution, and the hemorrhage ceased in two days. He thought the trouble was due to desquamation of the epithelium of the uterine and vaginal canals.

DR. BUSEY, in closing the discussion, said he could not agree with Dr. King that the form of hemorrhage referred to in the paper could take place either from the bladder or urethra. If so, it ought to be as frequent in male as in female infants, whereas as yet it had only been observed in female infants. He rejected also the theory of melena, because of the difference in time of life of occurrence, and of the frequency of grave and fatal complications and mortality of melena. He did, however, think that too early ligation of the cord and delayed circulation from delayed respiration were important causal conditions.

In the case reported, he had feared the method of resuscitation might have had some causal relation. Schultze's method had proven very satisfactory, but it was necessarily attended with some violence.

Stated Meeting, November 15th, 1889.

DR. JOSEPH TABER JOHNSON, *President, in the Chair.*

DR. THOMAS C. SMITH read a paper on

PUERPERAL RHEUMATISM.¹

DR. W. W. JOHNSTON opened the discussion. Recapitulating the notes of Dr. Smith's case, he was led to regard it as an example of typical pyemia, and for the following reasons:

Making use of Billroth's classical description of surgical pyemia, it will be found that Dr. Smith's patient had all or nearly all of the symptoms given as characteristic of that disease.

1. In pyemia chills are numerous, recurring frequently: 95 patients had 82 chills; 2 had 7 chills each; 3 had 8; 1 had 16 chills in three weeks.

Dr. Smith's patient had seven chills in fifteen days.

2. There is usually one chill in twenty-four hours; 16 patients only, out of 95, had 2 chills in twenty-four hours; 6 had 3 in twenty-four hours.

Dr. Smith's patient had one chill only in twenty-four hours.

3. Pyemic chills are more common in the morning and afternoon than in the evening and night. Out of 287 chills, 220 occurred between 8 A.M. and 8 P.M.; 67 between 8 P.M. and 8 A.M.

Dr. Smith's patient had one chill at 9:30 in the morning, one at 4:30 in the afternoon, another was said to have occurred "in the afternoon," while other hours are not mentioned.

4. In pyemia the first chill occurs within two weeks after the injury. In 14 of Billroth's cases the first chill was at the end of the first week; in 19 cases within two weeks. At a later date than this they are less frequent.

In Dr. Smith's case the first chill was at the end of the first week after labor.

5. Sudden rises and falls of temperature are characteristic of pyemic fever, so that Billroth recommends that a thermometer be retained in the axilla, so as to study these rapid changes.

Marked fluctuation characterized the fever in Dr. Smith's case. On Jan-

¹ See original article, page 474.

uary 23d the temperature was 102°; January 24th, 106° in the morning, 100° in the afternoon; January 25th, 104°. Frequently the normal point was reached.

6. The sweats of pyemia are profuse, "like those in advanced phthisis." Dr. Smith's patient had frequent sweats; he speaks of them as being "excessive."

7. In pyemia the pulse is only "moderately accelerated at the commencement of the disease. It always becomes more rapid, feeble, and irregular towards the termination in unfavorable cases."

Dr. Smith's patient, up to a few days before her death, had a pulse ranging from 72 to 96. Three days before her death it was 120, becoming more frequent, I presume, later.

8. In pyemia, metastatic abscesses in the lungs are indicated by a "sensation of suffocation, the pneumonic sputa, the friction sound of pleurisy, or the signs of pleuritic effusion."

Dr. Smith's patient, on January 24th, had a sharp stitch in the right side, with a temperature of 106°. On the next day there were "large râles in the right lung, with friction sound." Death occurred two days later.

9. Suppuration in the joints is not necessary in pyemia. In Billroth's typical case of pyemia he does not distinctly assert that pus must be present in the joints.

10. Death is common in pyemia, rare in rheumatism. There is no sufficient reason for death in Dr. Smith's case, if her disease had been rheumatism. If she had pyemia, death is easily accounted for.

Dr. J. referred to a case of puerperal pyemia reported by himself some years ago—giving an ensemble of symptoms analogous to those mentioned here—in which the local application of iodine and carbolic acid arrested the disease. He referred to the possible existence of a source of infection which had not been, nor could easily be, recognized. He could not unreservedly accept the salicylate of sodium test. Nor could he allow the history of subacute rheumatism to go unquestioned. The metastases were not characteristic, as said before. The absence of suppuration in joints is not conclusive evidence that pyemia does not exist. The pyrexia was not continuous enough for rheumatism. There seems to have been no endocarditis or pericarditis.

"Rheumatism" is a term frequently misapplied. Let us recall, for example, the distinction between rheumatoid arthritis, rheumatism, gout, gonorrhœal rheumatism, scarlatinal rheumatism, etc., all of which were formerly confounded and attributed to "cold," but in each case the arthritis is due to a distinct cause. The infective theory of rheumatism now prevailed, and the speaker cited from various authorities in evidence. Rheumatism is rare in the tropics. Mantel's cultivation of the germs of this disease was recited; Pepper's, etc.

While the particular germ has not been isolated, its existence cannot be doubted any more than in many other infectious diseases. Anatomical changes in acute rheumatism are significant in this direction, as they are the same as in other infectious diseases. Arthritis does not necessarily point to rheumatism. Poisons of other diseases may also lead to this condition. Puerperal fever is an infectious disease, and so is rheumatism. Both may be characterized by arthritis. The arthritis of puerperal pyemia is a symptom, but is not "rheumatic," as meaning a complication with another and different disease.

Dr. PRENTISS asked Dr. Johnston, as to the micrococci of rheumatism, whether they have been found to be truly characteristic.

Dr. JOHNSTON replied that a germ or germs had been found (by several investigators) which have produced the disease, but the subject is yet *sub judice*.

Dr. FRY does not understand whether Dr. Smith distinguishes puerperal rheumatism, absolutely, from other forms. The weight of authority seems to favor the idea of a true rheumatism, merely modified by the puerperium.

The differential diagnosis is not so easy as medical men insist. The criteria of successive implication of joints, and the results from exhibition of

sodium salicylate, are by no means satisfactory ; nor is suppuration a reliable test, as the history of gonorrheal rheumatism shows.

Dr. F. agreed with Dr. Johnston as to this case. Lingering primiparous cases tend to such results ; and the source of infection is, in many cases of puerperal fever, exceedingly hard to determine.

This case seems to belong to the thrombotic class, the venous system being chiefly affected (a class especially difficult to recognize). Antiseptic treatment must be accepted and practised, or such cases will be more common.

Dr. JOHNSTON asked Dr. Fry why he called an arthritis in puerperal fever rheumatism at all.

Dr. BUSEY described a case of so-called rheumatism of womb, seen some years ago, twice relieved by salicylate of sodium, then followed by miscarriage and pelvic inflammation.

Dr. McARDLE agreed with Dr. Johnston. He thought this patient had been thoroughly medicated, and asked if she had been as well nourished.

Dr. THOMPSON was not clear as to the pathology advanced to-night. He believed some suppuration necessary to the existence of pyemia.

This may or may not have been a case of rheumatism. He believed that such conditions might not (necessarily) imply a micro-organism as the cause.

Dr. SMITH, in closing the discussion, said he had described no new disease. It is conceded by all that a puerperal woman may have rheumatism, and that the disease may be either muscular or arthritic. When the disease first appeared, in the right elbow, it looked like a case of septic infection, and a careful examination was made to find the cause ; but the uterus appeared to be entirely free from trouble. There was no offensive discharge ; involution was progressing well ; there was no laceration of cervix or perineum ; no tenderness on pressure over any part of the abdomen. The labor had not been permitted to become a lingering one. Learning that the lady had suffered from rheumatism during gestation, the text books were consulted and the symptoms therein laid down corresponded to those presented by this patient. There was tendency to suppuration, excessive sweating, recurring chills and fever. These phenomena were so much like those found in cases of septic disease that it became necessary to look for differential signs, and these were stated to be a history of pre-existing rheumatism and the fugacious character of the disease. These characteristics were absent generally in pyemia. Still, it was conceded that the diagnosis was attended with difficulty in many cases, but it was also admitted that in these doubtful cases, and in septic cases generally, there was evidence of involvement of the pelvic organs, and that from these the system had become contaminated. In the case reported there was entire absence of evidence of implication of the uterus or of its appendages, and it is submitted that to insist on the septic origin of the disease is to ask us to believe a proposition to be correct which is entirely lacking in evidence for its support. If the statement of the case fails to convince gentlemen of the correctness of the diagnosis, it must also be acknowledged that a diagnosis of septic infection has not been established by other than inferential proof.

In answer to Dr. McARDLE's question, it may be stated that stimulants were freely administered, and the patient nourished by milk, broths, and other good sustaining food.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF CINCINNATI.

Meeting, November 14th, 1889.

The President, DR. GEO. E. JONES, in the Chair.

REMOVAL OF APPENDAGES FOR PYO-SALPINX; VENTRAL FIXATION OF UTERUS FOR RETROVERSION.

DR. RUFUS B. HALL reported two operations for pyo-salpinx, and showed the specimens. After removal of the pus tubes, he attached the uterus to the abdominal wall for the correction of posterior displacement.

Case I.—Mrs. M., æt. 37, of this city, mother of three children, the youngest nine years old. Has had two miscarriages, the last six years ago, at which time she had some septic trouble and pelvic inflammation. After this she was conscious of some trouble in her abdomen, and was under medical treatment almost constantly, but with no permanent benefit. She had been told by all her medical attendants that the cause of her trouble was retroflexion of the uterus, and various pessaries had been advised and tried, but never worn for more than a day or two because of the pain they occasioned.

When she applied to me for treatment, early in August last, she was a woman poorly nourished, suffering constant pain in her back and abdomen, and wholly disabled from performing her domestic duties.

Examination revealed the uterus retroflexed and fixed by adhesions, and a mass upon the left side, which was diagnosed as pyo-salpinx, with tenderness upon the right.

An operation for the removal of the pyo-salpinx and the correction of the retroflexion was advised, but the patient was unwilling to consent to an operation until she had tried further medical treatment.

She was put on a tonic and alterative course of treatment, with local applications, until October 1st, when, finding that her condition had not improved, she consented to the operation, which was made October 7th. The appendages, which contained pus, were removed, and the broad ligament reefed or shortened as much as possible by the ligatures that were applied to the appendages. But this reefing or shortening was not sufficient to correct the retroflexion, and therefore it was decided to make ventral fixation of the uterus, which was done by passing a silkworm-gut suture through the whole thickness of the abdominal wall about one and one-quarter inches external to the incision. This suture was then passed through the cornu of the uterus and out again through the abdominal wall about one-half inch above the point of entrance, and the ends of the suture given to an assistant. Exactly the same procedure was carried out on the opposite side. The assistant having charge of these sutures held the fundus uteri against the abdominal wall until the incision was closed; then these fixation sutures were tied over a piece of cork covered with anti-

septic gauze. These sutures were removed after two weeks. The patient made a good recovery, and at present the uterus remains firmly adherent to the anterior abdominal wall.

Case II.—Mrs. G., æt. 23, residence this city, married four years; two children, oldest 3 years, youngest 1 year. After the birth of the first child she suffered a good deal of pain in the back, which led her to consult a physician, who told her that she had retroflexion of the uterus, and inserted a pessary, which she wore the most of the time until she again became pregnant, which she did after about one year. This pregnancy aborted and was followed by some pelvic inflammation. In a few months she became pregnant for the third time, and was delivered of a living child about a year ago. After the birth of this child she suffered constant pain in the inguinal regions and back, which was so severe that she could not work, nor walk but little.

She came under my care August 28th of this year. I found the uterus retroflexed and fixed, with a tender mass upon either side. She has had constant constitutional and local treatment since the birth of her first child. Since the birth of her last child her condition has steadily grown worse. At the first examination I felt convinced that nothing short of surgical measures could afford her relief, and so stated to her. But at her request, and with a desire to exhaust every other remedy, I put her on a tonic and alterative course of treatment in connection with local applications, which was continued until the middle of October. Finding her condition no better, she consented to an operation, since I was unwilling to treat her longer without a prospect of benefiting her beyond affording some slight temporary relief.

The operation was made at my "Home" October 22d. After separating the adhesions, I removed a pus tube from the left and an adherent ovary and tube from the right side. The broad ligament was shortened as much as possible, but the uterus would sink back into the old position, so it was fixed to the anterior abdominal wall in the same manner as in the first case. The patient made a rapid recovery; at this writing, the twenty-third day, the uterus is firmly attached to the abdominal wall. The specimens show what firm and extensive adhesions existed, from the shreds of false membrane still adhering to them. This is particularly well marked in the specimens from the first case reported.

REMOVAL OF UTERINE APPENDAGES FOR ADHERENT OVARY AND TUBE.

DR. E. W. MITCHELL presented an interesting specimen of ovary and tube removed by Dr. Reamy, in consultation with Dr. F. Kebler. A young married woman, 27 years of age, the mother of several children, was for some time troubled with an excruciating pain in the left side, and from her many nervous attacks therefrom she had acquired the reputation of being a hysterical patient. She was unable to endure exertion, and was frequently confined to her bed for weeks. She removed to Texas, where a trachelorrhaphy was performed upon her, and the assurance then given that that would cure the difficulty. The trouble, however, continued, and she returned to this city. Dr. Reamy then opened the abdomen and found the left ovary firmly adherent to the tube, the latter curling around the former, and there was also extensive adhesion of the ovary to the tube. The left ovary and

tube were removed, but the right ovary, being perfectly healthy, was allowed to remain.

THE PRESIDENT next reported the following case of

PAPILLO-SARCOMA OF THE BROAD LIGAMENT.

Three weeks ago a young woman, *æt.* 29, an actress by profession, entered St. Mary's Hospital for the purpose of having a tumor in the abdomen removed. After a thorough examination, owing to the obscurity of the several points bearing on a diagnosis, I concluded to make an exploratory operation. Assisted by my confrères, Dr. Wenning and Dr. Reed, and in the presence of several others, I made an incision about seven inches long through the abdominal wall and found a tumor bound down by very firm adhesions. After breaking up some of the adhesions, it was discovered that several loops of the intestine were incorporated in the walls of the so-called fibro-cystic tumor. After consultation I came to the conclusion not to make any further attempts toward a removal. I made an incision in the tumor, through a wall about one and three-quarter inches in thickness, and gave vent to about two pints of a thick, greenish fluid. Passing my finger into the cavity of the tumor, I found that the lower portion was filled with papillomatous growth, which growth was freely removed by the large curette. In enlarging the opening into the tumor, a knuckle of intestine that was embedded in the wall was cut through; the cut ends were brought together by two rows of catgut suture.

After flushing the cavity with warm carbolized water, then careful sponging, the wound was closed up by passing the suture through the abdominal and cystic wall, of course placing a drainage tube in position.

We came to the conclusion that the tumor originated in the broad ligament.

The patient at the present time is doing well.

DR. REAMY said he would confine his remarks chiefly to the President's case. From the location of the tumor and the character of the internal relations, it seems to have been an intraligamentous cyst. The lining of the interior ought to settle that question. The source of development of these cysts is not positive, but it is supposed to be due to the compression of the primitive tubular structures originally derived from the Wolffian bodies, the remnants of fetal existence. The papillomatous nature of these growths is proof of this theory. In addition to this the relationship of the broad ligaments is corroborative of this view.

The intestinal attachment of these growths is a most interesting point. Some authorities hold that the entire growth should in all cases be removed, but this enucleation becomes a very dangerous procedure if the walls are very thick, as in the case reported, and the intestinal adhesion extensive. The treatment adopted by the reporter of the case—stitching the cyst to the abdominal wall and allowing free drainage—was the proper one. The speaker had three similar cases which got well in this way. It is singular how well they do under drainage, and how the cyst ultimately becomes obliterated, leaving the patient in good health.

The case mentioned by Dr. E. W. Mitchell was the wife of a well-known citizen. The trachelorrhaphy was undoubtedly legitimately done. As pregnancy occurred since that time, it might be inferred that the trouble was of a more recent date; but it must be remembered that the patient had great pain before this time, and, if it be true that the diseased tube and ovary were the cause of the pain, we must conclude that this diseased condition existed prior to pregnancy. The fact that the uterus was not ante-

verted is of great interest in the presence of intestinal adhesion. He believed that this adhesion was the chief cause of pain. He tied off the broad ligament and ovary as close to the uterus as possible. The broad ligament was greatly thickened, and there was great danger of the ligature slipping off. He tied it as tightly as possible, so as to compress all the vessels and nerves, and finally cauterized the stump with the Paquelin cautery to prevent secondary hemorrhage, and also to destroy the last remnant of ovarian stroma that might be left.

The subsequent accumulation of serum and pus in some of these cases is in favor of Dr. Johnston's view that the cause in many instances is the continued effort of activity of the ovaries and tubes and the accumulation of epithelium.

DR. PALMER referred to the question of papillary growths sometimes degenerating into sarcoma. He believed that this might sometimes occur, but the latter might be also a primary affection. Two years ago he reported a case of sarcoma in a young girl 17 years of age. She was enormously enlarged. It was plain that she had ascites, but the cause was unknown. She had no heart or kidney trouble, and an exploratory laparotomy was made, which revealed a large sarcomatous growth of the right ovary. He extirpated the tumor and tied the pedicle with a Staffordshire knot. The patient lived three days.

DR. WENNING said he would call to mind a similar case reported by him about one year ago, a young unmarried girl 17 years of age. The case was of interest because there was suspicion of pregnancy in the early months, amenorrhea, morning sickness, etc. To render the diagnosis still more perplexing, the girl reluctantly admitted having had sexual intercourse. The speaker was called in by the attending physician to settle the diagnosis. As the development of the tumor did not correspond in time to the supposed pregnancy, and also marked ascites existed and the topographical relations were entirely different, the speaker concluded that if pregnancy existed at all it was complicated by the presence of a tumor of the right ovary. As the patient grew rapidly worse, an abdominal section was made and an enormous degenerated sarcoma found which crumbled under the hands. It was partly removed, the hemorrhage stopped with hot-water effusions, and drainage instituted. This patient also died after three days.

Dr. Wenning, in this connection, also reported a case of extirpation of the ovaries and tubes, made a few days ago. The patient, 19 years of age, an inmate of a reform institution for girls, complained of severe pain in the region of the right ovary and tube. This pain had lasted over a year, and grew worse and worse, until now it was constant and excruciating, nothing giving relief. The patient, who had led a fast life, admitted that she had gonorrhea two years ago, and about one year later these pains came on. No enlargement of the tubes could, however, be made out per vaginam, but, from the history of the case, it was thought to be a case of pus tube from gonorrheal infection. She was removed to St. Mary's Hospital for operation. Contrary to expectation, no disease of the tubes was found, but both ovaries were enlarged and covered with a number of hematomata, the cortical portion of the ovary being very much thickened. The patient had lately had the greatest pain near the menstrual period, and it was supposed that the difficulty the Graafian follicle encountered in breaking through the thickened coat might have caused the very severe pains. Both ovaries and tubes were therefore removed, and the patient was now free from pain.

DR. REED remarked that in Dr. Reamy's case the pain was chiefly due to intestinal adhesions, but in Dr. Wenning's case it was probably due to the compression of the nerves in the follicles endeavoring to rupture. In examining Dr. Reamy's specimen he noticed that one follicle was unruptured, which reminded him of this explanation.

DR. REAMY replied that he would accept the last speaker's explanation in some instances. Ovarian neuralgia in the menstrual period may be due to the thickening of the cortical portion, a fact which was beautifully brought out by Dr. Hunter and corroborated by Dr. Coe, who found a

thickening in a number of these cases in post-mortem examinations. He doubted, however, if this view applied to his own case, for this patient had no painful menstruation.

DR. GILES S. MITCHELL, in referring to case No. 2 reported by Dr. Hall, said the history was quite remarkable. Patient had been married five years, and was the mother of three children, the youngest but one year old. She had been an invalid since her first confinement, but was sufficiently healthy in her reproductive organs to become pregnant and give birth to healthy children at term, and would have continued so to do, probably, had not the distinguished surgeon removed her ovaries. Speaker said, in his judgment, no reason sufficiently cogent had been given by the reporter of the case justifying the operation. One year was a very short time to wait after a normal delivery, especially since, according to the reporter's own language, patient's invalidism dated from her first confinement and not her last. Pyo-salpinx, in the vast majority of cases, is due to puerperal or gonorrheal infection. It can, and often does, exist for a long time without giving rise to much disturbance. The danger of rupture of the tube, insisted upon by the essayist, was not great. Every one knew the accident was extremely rare. Speaker said closure of both ends of the tubes often occurs, but it is not a necessary condition that the uterine end be occluded to establish a pyo-salpinx.

DR. HALL, in reply to the criticism made that he operated too early in one of his cases, said that the diseased condition dated from the birth of the first child. She had severe backache and abdominal pains ever since that time. The fact that she soon again became pregnant does not disprove this, for the disease was not yet very extensive, and was confined to one side at that time. The pains were present from the first, but became aggravated after the last child was born. With the evidence of purulent salpingitis, and considering the miserable condition of the patient, why should he have waited several years before performing the operation, if the patient should live that long? Pus in the pelvis demands operation and removal, the sooner the better, and the best mode of treatment is extirpation of the distended tube.

In reference to the cause of pain, he believed it was often due to intestinal adhesions, which are more painful than omental adhesions. The presence of pus, however, may also cause pain.

In his second case he operated for the pain. He was not convinced of the presence of pus, but he was aware of the fact that many cases of simple salpingitis lead eventually to the formation of pus.

VAGINAL HYSTERECTOMY FOR CARCINOMA OF CERVIX.

DR. WENNING showed a specimen of cancer of the cervix for which hysterectomy had been performed. The patient was a woman 51 years of age, who first became aware of the disease last May. She was admitted to St. Mary's Hospital on October 17th, 1889, in the care of the President of the Society. Her husband was clamorous for an operation; but, owing to the exsanguinated condition of the patient, operation was delayed until the speaker's term of service began, a few days ago. Her general condition had improved in the meantime; but, as the husband objected against any further delay, fearing an extension of the disease, he urged a radical operation at the earliest possible moment. Accordingly the speaker proceeded to remove the entire organ on November 13th, 1889. The vagina being clear, it was first thought sufficient to simply remove the cancerous cervix; but, as the disease seemed to extend some distance up into the uterus, it was thought safest to remove the entire organ. This proved to be an exceedingly difficult task on account of the increase in size of the entire uterus, which measures about 4 inches in length, 3 in breadth, and 2 in thickness, its weight being at least 4 ounces. Owing to the large size of the ovarian

and uterine vessels, and their high position in the pelvis, the large Spencer Wells clamps had to be used on each side, besides a few smaller clamps, to arrest the hemorrhage. The loss of blood was not very great, but the patient died from shock in about four hours after the operation.

An examination of the specimen shows that probably a cervical amputation could have removed the diseased structure entirely, as the mucous membrane of the body appears to be healthy; but this fact was not so easily determined before operation. It is also probable that a cervical amputation would not have been followed by a fatal termination so speedily. Had the patient not lost so much blood previous to her admission to the hospital, when she was treated by caustics and astringents exclusively, she might have had a better chance of recovery.

DR. REAMY, in commenting upon the two operations for cancer of the uterus, high cervical amputation and vaginal hysterectomy, said that they could not be contrasted, because each had its proper indication. He would not deny that in some cases total extirpation was indicated, but he believed these instances rare. In other cases the high amputation offers all the advantages of hysterectomy without the disadvantages of the latter. It is useless to bring statistics forward in favor of hysterectomy until three or four years have elapsed since the operation. The shock from this operation is not great; it is absolutely less than from an ovarian tumor operation. Nor is the operation very difficult, unless the uterus is very much enlarged, as is the specimen exhibited. Dr. Wenning must have had great trouble in getting the uterus out entire, and it was a skilful operation, sustaining his already high reputation. It is not to be concluded, however, that this enlargement is due to malignant infiltration; he was sure that in this case there was no cancer of the mucous membrane in the body of the organ. It is the rarest thing for a cancer that originates in the squamous epithelium of the cervix to extend into the body of the uterus.

When the point of origin and probable extension of the disease is known, the question arises, What should be done? If the disease commences in the columnar epithelium of the cervix, remove the entire body, because here the outlying structures are not involved before the entire uterus becomes implicated; but if the disease began outside of the cervical canal and has invaded the vaginal wall, the uterus should be let alone. The speaker did nothing of an operative nature in such a case, for he found the patients would die more decently. If the disease commences in the infravaginal portion of the cervix, the high amputation will be equal to total extirpation in its results, because the removal of structure laterally may be made just as wide as in total extirpation of the uterus.

In corroboration of this statement he could produce a cervix in his possession, removed from the patient up to the osinternum. This patient recovered and had a child since the operation, now six years ago. She is now in perfect health.

In some of his cases (he reported fifty-five in all) recurrence occurred two or three years after operation. Statistics are generally unreliable in this as well as in other operations—for example, in removal of the ovaries, tubes, etc. All statistics of these operations are not of value except when reported after several years, also the location and extent of disease at time of operation.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF LONDON.

Annual Meeting, Wednesday, February 5th, 1890.

A. L. GALABIN, M.D., *President, in the Chair.*

Specimens.—DR. CARTER exhibited a Double Pyo-salpinx. DR. AUST-LAWRENCE showed a Rare Form of Cystic Disease of the Chorion. DR. J. PHILLIPS brought forward a chorion from a woman aged 42, four months pregnant. MR. C. H. JAMES demonstrated a Preparation of the Uterus and Appendages from a Child five days old, showing Hemorrhage from the Uterine Mucous Membrane. DR. CULLINGWORTH exhibited for DR. ARTHUR ROBINSON a Uterus with Placenta Previa.

URETHRAL DIVERTICULA.

DR. AMAND ROUTH read this contribution. Three cases of urethral diverticula are related, and references made to others. The literature on the subject, though dating from 1847, is scanty and scattered.

The *symptoms* are progressive discomfort and frequency of micturition, dyspareunia, and the formation of a swelling which appears at the vaginal orifice. Pressure upon the swelling causes thin, offensive, irritating pus to pass into and out of the urethra. Cases are recorded showing that if these diverticula are left untreated, retrograde changes occur along the urinary track.

The *physical signs* are unequivocal, differing on the one hand from dislocation of the urethra, and on the other hand from simple dilatation of the middle third of the inferior wall (urethrocele).

The diverticulum is essentially a urinary pouch or cyst communicating with urethra of normal calibre, usually in its middle third, by an orifice relatively narrow.

The *etiology* seems to be: 1. Closure of the ducts of pre-existing urethral glands, retention cysts resulting. Suppuration and ulceration into urethra by a small, often valvular hole follows, and the inflammation is kept up by urine trickling into the sac at each act of micturition. 2. Blood cysts which have passed through similar changes. 3. The formation of pseudo-cysts by injury to the urethral floor during labor or instrumentation.

Pregnancy, with its increased local activity, seems usually to induce the formation of these cysts, and parturition appears to be often the immediate cause of the rupture.

The treatment is mainly surgical. 1st. *Where urethritis or cystitis exists*, the cyst wall should be dissected out and cut off close to urethra, and the vaginal wound left open for drainage. 2d. *Where the urinary passages are healthy*, the cyst should be dissected out, the opening into the urethra enlarged to allow drainage, and the vaginal wound at once closed. In either case the urine should be drawn off till union is assured.

DR. BRAXTON HICKS had seen five cases of the kind. In one the cavity was filled with phosphatic concretions. He opened the cavity, in each case, freely from the vagina, and kept it open till the urethral opening closed, which occurred after a short time. The plan recommended by Dr. Routh was possibly more precise.

DR. HERMAN noted that these diverticula, even when converted into retention cysts by closure of their ducts, caused no symptoms, such as Dr. Routh had described, until they became inflamed. Hence this memoir should properly be named "*Inflamed Urethral Diverticula*." Cysts from which fatty matter was discharged into the urethra were probably dermoid. In the Transactions for 1886, Dr. Herman had described a case very similar to one of those related in the present paper. He had reported that case under the title "*Abscess of the Urethra*," a term which he had used as not implying any theory of causation. The interior of the cavity, in that case, was ragged, not smooth, as would be expected in a true cyst, and so it was in one of Dr. Routh's cases. The condition, he had suggested, might have been a result of chronic congestion of the urethra, such as had been described by Sir Charles Clarke and Dr. West. This condition was especially frequent in pregnancy, and Dr. Herman observed that Dr. Routh had commented on the frequency with which the suppuration appeared to have been induced by pregnancy and labor. Dr. Routh attributed it to injury during labor, and Dr. Herman thought that the injury sustained during delivery would be more likely to bring about suppuration if the congestion described by Sir C. Clarke had been present before delivery. A "*diverticulum*" generally signified a communicating cavity due to a congenital peculiarity of structure. In that sense, the cases of abscess opening into the urethra, classed "2" and "3" under "*etiology*," were not true diverticula. They could only be called diverticula in the same sense that a pelvic abscess opening into the rectum could be called a rectal diverticulum. Dr. Routh's paper was a valuable contribution to our knowledge of its subject.

DR. M. HANDFIELD-JONES had shown before the Society two small cysts which he had removed from the vagina of a patient sent to him as a case of cystocele. They lay so close to the floor of the urethra that he found it difficult to avoid wounding that canal when removing them. Had they been left alone, these cysts would probably have opened into the canal of the urethra; or had labor occurred they might have suppurated from pressure, and a communication with the urethra would thus have been established. In either case a urethral diverticulum would have been formed, and the irritation caused by the admission of urine would have given rise to symptoms rendering an operation necessary.

MR. ALBAN DORAN believed that diverticula certainly arose from one of at least two sources—a cyst, or else some change in a urethral gland or its obstructed duct; for cysts undoubtedly developed near the urethra, and urethral glands undoubtedly existed. A good monograph on cysts of the urethra and on the histology of the urethra in adult women was much needed. Certain interesting embryological and morphological questions must not be made too prominent in such a work; they did not directly concern the pathologist. The urethral pouch might be a "*distention diverticulum*," or a protrusion of the mucous membrane through a deficiency of the muscular wall, due perhaps to injury during labor. Dr. Hilton Fagge had described distention diverticula of the intestines in the *Trans. Pathol. Soc.*, vol. xx., 7.

In reply, DR. AMAND ROUTH could find no word better than "*diverticulum*" to express all the forms of these cysts. In reply to Dr. Herman, he thought that the moment urine obtained access to the cyst inflammation ensued. The cysts might arise from a sebaceous follicle or from a dermoid cyst, as had been stated by Dr. Priestley. He thanked Dr. Braxton Hicks and Dr. M. Handfield-Jones for their notes and early history of other cases. In a recent case, the urine containing pus, he had only closed the vaginal wound partially, so as to allow free vaginal drainage. The wound had quite closed in ten days.

THE PRESIDENT then delivered the

ANNUAL ADDRESS.

The past year was memorable, being the last in which the Society met in the old rooms belonging to the Royal Medical and Chirurgical Society, 53 Berners street. Arrangements for transferring to that Society's new premises in Hanover Square the library of the Obstetrical Society were nearly complete. The President then expressed his satisfaction at the working of the Midwifery Board of the Society; an annually increasing number of candidates presented themselves for the Society's diploma. The Society had always been in favor of legislation to establish a register of midwives and suitable test examinations throughout the country. It had been proposed of late to establish a voluntary register for midwives, in association with a similar register for nurses. A voluntary register might fail, however, to secure the full benefits which would follow compulsory registration, since it would become futile if any large proportion of the midwives did not choose to register themselves. Moreover, the midwives themselves, so far as they are represented by the Midwives' Institute, the members of which are holders of the diploma of the Society, preferred to stand by themselves, and declined to be associated with nurses. The President was therefore glad to say that this year there was again a possibility of legislation, since a bill was to be introduced into Parliament by Mr. Pease, following in the main the lines of the draft bill drawn up some years ago by the Obstetrical Society, but giving to the new county councils the duty of appointing the examining bodies. The project had received the approval of the General Medical Council. After reference to the library and the satisfactory financial condition of the Society, the President referred to the life and work of each of the Fellows who had died in the course of the past year. They included: Dr. Charles Davidson; Dr. H. J. Barron; Mr. R. B. Bothamley; Mr. Samuel H. Wheatcroft; Dr. G. C. Kernot; Dr. Oscar Prevot, of Moscow, elected Corresponding Fellow of the Society in 1876; Dr. J. Rutherford Kirkpatrick; Dr. Lawrence Trent Cumberbatch; and Mr. Francis James Bailey. The President, in conclusion, reviewed the work done by the Society in 1889, and looked forward with confidence to a year of yet more valuable work in the new meeting room.

DR. GERVIS, in proposing a resolution of thanks to the President (which was seconded by DR. JOHN WILLIAMS and carried unanimously), observed that the Society was deeply indebted to the President for the care which he had taken of its interests in the negotiations with the Royal Medical and Chirurgical Society, and for the very able manner in which he had brought them to a pleasant and satisfactory conclusion.

The Retiring Honorary Secretary and Honorary Librarian.—DR. HERMAN, seconded by DR. AUST-LAWRENCE, proposed a vote of thanks to the retiring Honorary Secretary, DR. PERCY BOULTON, whose labors in connection with the negotiations for the new premises had been very arduous, and to the retiring Honorary Librarian, DR. HORROCKS. This vote was carried unanimously.

The Retiring Officers.—A vote of thanks to the retiring Vice-Presidents and other members of the Council was proposed by DR. LEITH NAPIER, seconded by DR. C. H. F. ROUTH, and carried unanimously.

The following officers for 1890 were elected :

President : Alfred Lewis Galabin, M.A., M.D.

Vice-Presidents : Percy Boulton, M.D.; Francis Henry Champneys, M.A., M.D.; Arthur Guy Elkington (Deputy Surgeon-General); Thomas Crawford Hayes, M.D.; Evan Jones (Aberdare); A. E. Aust-Lawrence, M.D. (Clifton).

Treasurer : G. Ernest Herman, M.B.

Chairman of the Board for the Examination of Midwives : James Watt Black, M.D.

Honorary Secretaries : Alban Doran; Peter Horrocks, M.D.

Honorary Librarian : William Duncan, M.D.

Other Members of Council : Thomas Edward Bowkett; Robert Boxall, M.D.; Albert Charles Butler-Smythe; W. Radford Dakin, M.D.; S. Houston Davson, M.D.; Henry Gervis, M.D.; Robert Alexander Gibbons, M.D.; Frederick B. Hallows (Redhill); Edwin Hollings, M.D.; Henry Ambrose Lediard, M.D. (Carlisle); Henry Colley March, M.D. (Rochdale); Richard Henry Milson, M.D.; Oliver Calley Maurice (Reading); Thomas Cargill Nesham, M.D. (Newcastle-on-Tyne); Edward James Nix, M.D.; John Baptiste Potter, M.D.; Herbert R. Spencer, M.D.; Harry Speakman Webb (Welwyn).

ABSTRACTS.

1. Leopold : The Treatment of Rupture of the Uterus (*Arch. für Gyn.*, Bd. xxxvi., Heft. 2).—The author reports four cases of complete rupture of the puerperal uterus, of which three recovered. From his experience and from a study of the literature he concludes that :

1. Rupture of the uterus anteriorly at the vesico-uterine fold is more frequent than has been generally supposed. A rupture at this point does not necessarily produce severe hemorrhage, and may be closed by forced ante flexion of the uterus by pressure and bandage, together with plugging the rupture, uterus, and vagina with iodoform gauze.

2. The danger to the mother increases directly as the time since rupture and the force used in attempting delivery, these factors leading to exhaustion from hemorrhage or infection.

3. The child dies very soon after rupture.

4. The mother may show considerable shock within a very short time, but quick assistance, and successful control of hemorrhage, can save the woman and allow a favorable prognosis in the most severe tears where the woman is seen at once.

5. Deliver the child so as to cause the least risk to the mother; not by *turning*, as that would extend the tear, but by perforation or embryotomy. If already engaged in the lower pelvis, deliver manually or by forceps.

6. If the child has escaped into the abdominal cavity, perform laparotomy at once under strict aseptic precautions.

7. Before and after delivery by the natural passages cleanse the parts thoroughly. Unite the edges of the rupture by apposition from within and without (traction by means of a hook, or forceps, and pressure bandage), place a long, thick wick of iodoform gauze in the uterus, from the fundus through the vagina, packing it carefully behind the rupture. Remove this in eight to ten days.

8. After a laparotomy, hemorrhage being controlled and the abdominal cavity cleansed, suture the rupture if possible, or plug uterus and vagina with iodoform wick, and lead another through the tear and lower angle of the abdominal wound.

9. Subsequent treatment according to the usual rules.

10. In considering the question of laparotomy, always remember that

hemorrhage which may be insignificant externally may be considerable and dangerous within.

2. Artemieff: On the Micro- and Bacterioscopic Examination of the Lochia (*Zeit. für Geb. u. Gyn.*, Bd. xvii., II. 2).—After a careful personal study of the subject and examination of the literature, the author concludes:

1. The normal lochia is made up of red blood corpuscles, locheiocytes, pavement epithelia, mucus corpuscles, and cells in a condition of fatty degeneration.

2. During the first days of the puerperium the red corpuscles predominate (lochia rubra), they diminish gradually (lochia serosa), while the locheiocytes increase (lochia alba) and form the bulk of the flow, together with pavement and fatty epithelia and mucus corpuscles.

3. The vaginal secretions of pregnant women are always acid; the lochia is neutral at first, and later (seventh, eighth, and following days) becomes acid.

4. The normal lochia of perfectly healthy women contains no pus corpuscles.

5. Locheiocytes are to be distinguished from pus corpuscles by their size; the first are 12 to 14 μ in diameter, the latter 8 to 9 μ . Stained specimens show 2 to 4+ deeply colored nucleoli, surrounded by a light, distinctly marked circle; pus corpuscles are entirely colored and show no nucleoli.

6. Perfectly normal lochia contains no micro-organisms.

3. Prochownik: A Substitute for Induced Abortion in Moderate Pelvic Contraction (*Cent. für Gyn.*, No. 33, 1889).—In three cases of women with rachitic pelvic scoliosis, all of whom had borne children which could only be delivered after perforation and the use of the cranioclast, he ordered the following diet during subsequent pregnancies: Breakfast, one small cup of coffee, 25 gm. of zwieback; Dinner, meats, eggs, and fish, a small amount of green vegetables cooked with much fat, salad, cheese; Supper, the same, with 40 to 50 gm. of bread, and butter ad libitum. Water, soup, potatoes, pastry, sugar, or beer not allowed. As a beverage, 300 to 400 c.c. of red or Moselle wine daily.

As a result of this diet the children were all born at term and alive. They were healthy and perfectly developed, but with scarcely any fat, and with less firmness of bone than normal.

The author believes that this method will save many children otherwise condemned to premature birth and probable death.

4. Cohnstein: The Use of the Forceps with the Head arrested at the Brim (*Arch. für Gyn.*, Bd. xxxvi., Heft 2).—This paper gives an elaborate statement of the effects of forceps compression on the fetal head, the conclusion reached being practically that by compression of the antero-posterior or transverse diameters, there is produced only an increase in the vertical diameter, and that not in proportion to the lessening of the other diameters. All these measurements were taken on the cadaver, so that their correctness in the case of living children may be questioned.

5. Cholmogoroff: The Treatment of Uterine Fibroids by Galvanism (*Zeit. für Geb. und Gyn.*, Bd. xvii., Heft 2).—The author reviews the literature and gives the following results of his own investigations: Intra-uterine electrization, if applied strictly according to the rules of asepsis, is a harmless remedy. In the treatment of fibroids, the positive pole in the uterus has undoubted hemostatic properties, while the negative increases bleeding. Even after long-continued treatment the reduction in size of the tumor is insignificant. There can be no doubt of the beneficial effects of electricity upon the patient's general condition.

THE AMERICAN JOURNAL OF OBSTETRICS

AND
DISEASES OF WOMEN AND CHILDREN.

VOL. XXIII. JUNE, 1890. No. 6.

ORIGINAL COMMUNICATIONS.

MY RECENT EXPERIENCE WITH ELECTRICITY IN GYNECOLOGY.

BY

PAUL F. MUNDÉ, M.D.,

Professor of Gynecology at the New York Polyclinic and at Dartmouth College; Gynecologist to Mount Sinai Hospital; Consulting Gynecologist to St. Elizabeth Hospital.

My practice with electricity as a therapeutical agent in gynecology dates back fully fifteen years. Gradually I began to use it with more and more frequency, employing both the galvanic and faradic currents, as the indications seemed to me to call for them, until I came to regard it as one of the most beneficial as well as the safest therapeutical agents at my disposal. Influenced by the desire to place before the profession the manifold utility of electricity in the treatment of the diseases of women, and feeling that its value was by no means properly appreciated, in spite of the writings of several electrologists here and abroad, after ten years of sufficient experience I determined to lay my results before the medical public. I did so in an article of forty-two pages published in the AMERICAN JOURNAL OF OBSTETRICS for December, 1885. This article attracted some attention and appears to have

become quite popular, for I not only received many requests for reprints from all parts of the country, even to the present time, but it has also been translated into the French and Russian languages, and the permission to translate it into German was recently asked for, but withheld by me until a new and revised edition of the article, which I was about to prepare, should be ready. The preparation of this revision has not yet been completed; and as I am constantly being called upon to give my present views as to the utility of the method, particularly as regards its application to the treatment of uterine fibroids, and as I have recently been informed that my position on this subject is somewhat misunderstood, I prefer to anticipate the publication of a second edition of my memoir by a few remarks on my recent experiences with the agent.

When I published my article in 1885 I had not visited Apostoli's clinic—indeed, I knew nothing of his peculiar methods except such as I had learned from a superficial perusal of Carlet's thesis on the treatment of fibroids by electricity, published in 1884, and a few minor journal articles of no particular importance; but I had employed galvano-puncture per vaginam in two instances, both of hard fibroid tumors, using the negative pole for the puncture, the positive as a metal plate on the abdomen, without anesthesia, and giving as strong a current for ten to fifteen minutes as the patient could stand; in one case three, in the other only one application being given. Both patients refused further treatment of this kind, because they said it was too severe, and left the hospital. In both I had an opportunity, about a year later, to quite accidentally satisfy myself that the tumor had entirely disappeared. I confess to having been very much surprised that these tumors, which reached from nearly the umbilicus deep down into the cavity of the pelvis, should have been entirely dispersed by the galvano-puncture, but such, nevertheless, was undoubtedly the case. One of these cases is mentioned in my article of 1885 (see page 39 of the reprint); the termination is not stated there, because I did not see the patient again until after the article was published. I was perfectly familiar at the time with the cases reported by Kimball and Cutter in 1876, where a series of fifty cases, four of whom died in consequence, were operated on by thrusting a stout, gutter-shaped dagger through the

abdominal wall into the tumor; but I did not consider either the method or the results which they obtained particularly desirable.

It was the late Dr. Freeman, of Brooklyn, who really decided me on attempting further trials with the galvano-puncture of fibroids, but I determined to confine such treatment entirely to those which could be safely reached through the vagina. My experience with this particular method in fibroids was thus at that time limited to two cases, and I had not at all attempted the reduction of these tumors by the intrautero-abdominal method (Apostoli's) when I visited Apostoli's clinic in August, 1886. My brief but quite satisfactory observations in that clinic were published in the report of my journey, to be found in the September, 1886, number of the *AMERICAN JOURNAL OF OBSTETRICS*. I will merely state that, while I believed Apostoli to be perfectly sincere and truthful in his statements, I could not but look upon him as an enthusiast on this particular subject, since, for instance, he demonstrated to me how he proposed to cure a case of polypus uteri presenting at the external os, by galvano-puncture, which I told him I could cure in fifteen minutes by enucleation and removal.

Still I felt that there were so many cases of uterine fibroids which required treatment, and which could not be removed by the knife, or only with the greatest danger, that I determined to employ the method wherever I found it advisable. For this purpose I requested Apostoli to procure for me the precise instruments which he used, and he kindly had them sent to me after my return home. I have been using them ever since, with the exception of the Gaiffe galvanometer, which I found too sensitive if used where it was liable to be affected by neighboring metals or by being accidentally moved or jarred. The large pad of wet clay and the platinum sound I have used constantly wherever these two instruments were called for.

The popularity of my 1885 article I have largely attributed to the fact that I endeavored to avoid all technical complications in my descriptions, and confined myself entirely to the statement of intelligible, practical, and simple facts as developed by my own experience. Following this plan, I will now briefly enumerate my subsequent results since the publi-

cation of that article, to which I will refer my readers for all minute details. For other technical explanations, not of a practical therapeutical nature, the special works on electrophysics should be consulted.

First, *Apparatus*.—I have made but two changes in the apparatus which I employed five years ago, using now, as then, the forty-cell cabinet galvanic battery made by Waite & Bartlett, of this city, which also contains a faradic battery. I have employed, in cases where I needed a galvanic battery with only moderate strength, the Barrett chloride-of-silver battery of fifty cells, which is an admirable instrument for portable use, but is much weaker than the batteries worked by fluids, averaging about one-half of the strength of the latter. I have also made it a constant practice to estimate the current of the galvanic battery by always testing it through a galvanometer, of which I have three in my possession—one, registering only 20 milliamperes, which I use for ordinary office work, where only mild, mostly sedative currents are desired; and another, registering 250 milliamperes, for electrolysis. I have one of Waite & Bartlett's of 500 milliamperes, which I bought in place of the Gaiffe galvanometer already referred to, but which, while it is perfectly reliable, is equally as sensitive to any accidental derangement as that of Gaiffe. The one for 250 milliamperes, however, also of Waite & Bartlett's manufacture, is furnished with a screw, by tightening which the needle is dropped temporarily from its suspension; when the instrument is to be used again, the needle is brought into proper suspension by loosening the screw, and the polarity of the needle toward zero is easily secured by shifting the instrument until the needle rests at zero. This is by far the best galvanometer which has come to my notice.

I may say here that I look upon the galvanometer in practical electro-therapeutics merely as a means of determining the strength of the battery at the moment when the connection with the galvanometer is made, and of ascertaining how much resistance to the current the portions of the body through which it is passed offer. But by no means do I believe the galvanometer absolutely necessary to indicate the exact number of milliamperes (that is, the precise strength of the current) which it is essential for us to administer in a given case

or which the patient can endure. In this respect electricity as a therapeutical agent differs from other therapeutical agents, particularly the internal administration of drugs, the effect of which is usually beyond our control when once swallowed. In electro-therapeutics, if the patient is not under an anesthetic and if we wish to produce only sedative, analgesic, and painless effects, the sensations of the patient are the *real* and *only* indications by which we can gauge the strength of the current which should be used. Therefore, while it is useful and pleasant to know by the advance of the needle how strong our battery remains, in the cases where we desire only the mild effect just referred to, the real therapeutical limit of the current is, after all, a decided sensation of pain complained of by the patient. When this point has been reached the current of electricity used is strong enough, no matter what the milliamperè meter may indicate. In cases, however, where a chemical change is desired to be effected in the part through which the current is passed, as in electrolysis of uterine fibroids, the current will usually have to be employed so strong as to give rise to decided pain, and therefore the patient will generally be under the influence of an anesthetic and unable to express her sensations. Then, of course, it is of paramount importance that the exact strength and intensity of the battery, as well as the amount of resistance of the human body, be known; and this can only be done accurately by means of the galvanometer. While, therefore, I regard the galvanometer as not absolutely necessary for the proper use of the galvanic current when only mild currents are to be employed and the patient is able to regulate its strength by her sensations, I consider it indispensable for all electrical treatment where usually an anesthetic is given. I am thus explicit in stating my opinions as to the applicability of the galvanometer, because I have been criticised for not having recommended it exclusively and constantly in my article in 1885. It must be remembered that at that time the galvanometer in medical practice was by no means so commonly employed or so generally known as at the present day. Indeed, I may say that during the last five years the science of electro-therapeutics, chiefly in gynecological practice, has made a greater advance than during any previous time.

One important innovation on my former armamentarium is the Bailey rheostat, furnished by the Law Telephone Co., which I now invariably use to steady and temper the current, turning on the full strength of the battery and regulating its strength solely by the rheostat. Thus all interruptions and shocks are avoided. I still use the ball- or button-shaped electrode screwed to a universal handle, made for me by Waite & Bartlett, for the purpose of intravaginal galvanization; and I employ the platinum intra-uterine sound for electrolysis of fibroids, and the ordinary steel-sound electrode for intra-uterine faradization. The vaginal electrode is always carefully covered with absorbent cotton to prevent burning the vagina or cervix, which seems to occur with both poles when the sittings are long or frequently repeated. For galvano-puncture of fibroids per vaginam I have had made several spear-shaped, steel-pointed, and properly insulated needles which are to be screwed into a universal handle, also properly insulated, to which the battery cord is attached. For external electrodes I use the large flat sponges covered with rubber, and in cases of fibroids the Apostoli clay electrode. I have not seen fit to experiment with the Martin animal-membrane electrode, because I have been informed that the membrane is rapidly destroyed and requires frequent renewal. The smaller clay pads which have been devised by various gentlemen, as more compact and less nasty than the old clay pad, have not, in my experience, answered as well as the latter, not adapting themselves so closely to the skin, and therefore either affecting the skin too much at certain spots or passing the current through in too irregular a manner. I have, therefore, in spite of the nastiness of the old clay pad, retained my allegiance to it as yet. By adding one-quarter glycerin to the water with which the clay is moulded, the otherwise usual drying and caking of the clay is prevented.

As regards the relative utility of the two currents, I still have the same opinion that the galvanic current is far more frequently useful and applicable than the faradic. I may say again that I have restricted the faradic almost entirely to cases where I desired to produce a very decided irritant and musculo-contractile effect, as in cases of amenorrhea, deficient development of uterus and ovaries, deficient sexual feeling, subinvolution, and occasionally submucous fibroids. In all other

diseases of the female pelvic organs where electricity seemed indicated, I have preferred the galvanic current.

DISEASES BENEFITED BY THE FARADIC CURRENT.

Deficient development of uterus and ovaries, amenorrhea, subinvolution of the uterus and menorrhagia, submucous uterine fibroids.—My favorable observations with the use of this agent in these conditions, reported five years ago, are confirmed by recent experiences. I have been particularly pleased with the effects of the faradic current, one pole in the uterus, the other alternately over the ovaries and the sacral region, two to three sittings a week, twenty to thirty minutes each, continued for from three to six months, in cases of deficient or scanty menstruation where often two or three periods were passed without any show whatever, occurring in large, fat women. Here I have seen within the last three years two instances of complete restoration to regular menstruation, with, in one case, the occurrence of repeated conception (the lady is now in the fourth month of her second pregnancy since the treatment was completed), after eight years of sterile married life. In several instances I have also seen, by a similar course of treatment, a decided improvement in the tone of the sexual functions, as shown by an increase of sexual passion, for the absence of which these patients consulted me. It is almost needless to say that these women were also sterile. I have been particularly impressed with the benefit of the faradic current used in this manner in women who had become rapidly stout soon after marriage, and in whom menstruation had correspondingly decreased in quantity and regularity, they remaining sterile at the same time. Of course it requires that the treatment be continued for a number of months in order to achieve any positive result.

In subinvolution, and menorrhagia depending upon it, I have also to confirm my previous favorable experience, both with the intra-uterine and the vaginal electrode.

In two instances I have succeeded in aiding the steady administration of ergot, as a means of forcing down a submucous fibroid, by the strong faradic current. In both cases the tumor was gradually forced by these methods through the cervical canal so that it could be easily enucleated and removed.

DISEASES BENEFITED BY THE GALVANIC CURRENT.

Hyperplasia uteri, chronic oöphoritis and pachysalpingitis, chronic pelvic cellulitis and peritonitis, pelvic neuralgia local and reflex, obstructive neuralgic dysmenorrhea, uterine fibroids.—As regards *hyperplasia uteri* I have nothing to add, except that I still believe that the milder currents which tend to relieve pain and quiet reflex neuroses will prove more beneficial than the stronger electrolytic currents. In *chronic inflammations with adhesions of the ovaries and tubes*, I am still of opinion that the analgesic and sedative influence of the milder currents, as applied with the ball electrode in the vagina (positive pole) and the sponge on the abdominal skin, give more relief, when continued with sufficient perseverance and frequency, than any other *one* local agent. But I confess that I have been most grievously disappointed in several instances where I had confidently expected to give relief and avoid the, to me, in those particular cases, distasteful removal of the diseased organs. However, on performing the operation at last, the failure of the electric current to give relief was easily explained by the excessively grave pathological degeneration of the appendages. Thus, twice double ovarian hematoma and once a multiple pyo-salpinx were found, which conditions, of course, could not be relieved by electricity or any other means short of removal of the diseased organs. I still employ, although perhaps with somewhat less confidence on account of these failures, the galvanic current as a palliative means for laparotomy, which I endeavor, as heretofore, in all cases where my fingers do not enable me to make a positive diagnosis of well-marked disease of the appendages, to defer as long as my conscience and the patient's condition permit. When the appendages were bound down by well-marked adhesions, when exudations enveloped them, or when that now, in my opinion, much more rare disease than I formerly thought, chronic pelvic cellulitis, is present, I can confidently affirm that the mild currents of galvanism, passed directly through the diseased tissues, have resulted in a decided diminution in size. Pelvic neuralgia spreading down either the crural or the sciatic nerve can almost invariably be relieved by passing a mild galvanic current along the affected nerve, the positive pole being placed

against the sensitive point of exit of the nerve in the pelvis (that is, *per vaginam*), the negative at its other extremity.

Pain in the ovarian regions, which, for the want of a better physical explanation, I have been obliged to consider a neuralgia of the ovary, has usually yielded rapidly to vagino-abdominal galvanization.

Obstructive and neuralgic dysmenorrhea unquestionably yields with great readiness to the repeated use of the galvanic current, the strength of the current being greater in the obstructive variety than in the neuralgic. Indeed, I should not hesitate to pass as strong a current as 175 to 200 milliampères through a narrow uterine canal, with the object of rendering it temporarily and even permanently patulous. But I would avoid touching the fundus uteri with the sound. Such applications must be made several times weekly and must continue through several months. Negative pole in utero.

I have never attempted to cure a pyo-salpinx or suppurative salpingitis with galvanism, applied in any form whatever. Pus, wherever found, should be evacuated and the abscess cavity obliterated. I do not see how galvanism can do this.

Before proceeding to discuss my recent experiences with electricity in uterine fibroids, I will merely mention that I have not had an opportunity to add to my observations of the treatment of superinvolution of the uterus, erosion of the cervix, and uterine displacements to which I referred very briefly in my last article. I really have no excuse to offer for not testing the faradic current in uterine displacements; I can merely say that I have been so universally successful in relieving the pains of the patients, and in keeping the displaced organ, after its replacement, in a normal position by properly fitting pessaries, that I have not found the necessity, nor indeed have I had the time, to experiment with methods for the restoration of tone of the uterine supports. For this reason I have not tested the new treatment by pelvic massage, nor do I think that I am likely to do so, so long as my time remains as much occupied as it is at present.

During the two years and eleven months intervening between October 1st, 1886, and September 1st, 1889, I was consulted in 121 cases of fibroids of the uterus. Since then I have probably seen as many as 50 more. Out of these 121 recorded

cases I found that only 62, or about one-half, required any treatment whatever, and only 8 of these seemed to me worthy of the trouble which the systematic use of galvanism entails. Four of these were interstitial tumors and were treated by vaginal galvano-puncture, in three cases with the result of the complete absorption of the tumors after from one to five months respectively. In the four subperitoneal tumors, only intra-uterine galvanism was employed, and merely a general improvement as regards cessation of hemorrhage and diminution of pain was achieved. From twelve to thirty-six sittings were given in these cases. Since September 1st, 1889, I have used galvano-puncture in four cases, and internal intra-uterine galvanization in two cases. The eight cases of galvano-puncture I will briefly relate.

CASE I.—M. S., age 49 years; cook. Admitted to Mount Sinai Hospital November, 1886. Large interstitial fibroid, size of cocoanut, in anterior uterine wall. Menorrhagia. Intense anemia. Deep galvano-puncture through anterior vaginal wall, 200 milliampères ten minutes. A week later, temperature to 102+; pain in suprapubic region; offensive discharge. Signs of septic infection. Satisfied of this, I enlarged the sinus formed by the galvanic needle, found necrotic tissue, removed it by the curette, disinfected and drained. Slow but complete recovery, with some decrease of tumor. Seen by me one year later at the Polyclinic: the tumor had entirely disappeared, and the patient was in robust health; menorrhagia ceased. Patient came to the Polyclinic for some obscure pelvic pains, probably due to constipation.

CASE II.—Mrs. T., age 27 years, one child, consulted me at my office in the winter of 1887, with her family physician, for menorrhagia. She was excessively anemic. I found an interstitial myoma, somewhat larger than my fist, in the anterior uterine wall. Repeated curetting and applications of liq. ferri persulph. produced only temporary relief. The patient became discouraged and I lost sight of her. In January, 1888, her physician again called me to her. I found her in bed, where she had been for three months, blanched to the color of a sheet and much emaciated. Galvano-puncture was proposed and accepted. Four vaginal punctures were made under chloroform; not over 200 milliampères could be obtained, each sitting ten minutes, at intervals of about one week, the last on the day after the blizzard, March 13th, 1888; also two intra-uterine galvanizations. In June following I met the lady in the street, so blooming that I hardly knew

her. She said she was perfectly well; and her physician later on told me that the tumor had entirely disappeared.

CASE III.—M. K., age 42, entered Mt. Sinai Hospital in October, 1888, for menorrhagia from a large myoma (size of adult head) of the anterior uterine wall. Four galvano-punctures were made at intervals of about two weeks, the needle being inserted from 2 to 3 inches. Although, as usual, the positive pole was used, quite free bleeding followed the puncture. No anesthetic was given, but fully 200 milliamperes were passed each time for ten minutes. Rest in bed and ice bag. On leaving the hospital, two months after admission, the tumor was only half as large. Six months later, called at my office, by request; tumor entirely gone.

CASE IV.—Mrs. J. P., age 34, two children, consulted me in March, 1889, for severe backache and bearing down. I found a large, hard fibroid filling the whole posterior portion of the pelvic cavity, and quite immovable. I advised vaginal galvano-puncture, which was easily practicable, as the tumor seemed fixed in Douglas' pouch. Three punctures were made, each of 250 milliamperes for ten minutes. There was no reaction. Circumstances beyond my control obliged the patient to suspend treatment. To my surprise, when she called on me at my office in December, 1889, or eight months later, no trace of the tumor was discernible and the uterus was fairly movable.

CASE V.—A young lady was seen by me in consultation for slight peri-oöphoritis in June, 1888, and again in September of the same year, when absolutely no trace of a pelvic or uterine tumor was discovered. She was engaged to be married, and for this reason my advice was asked. She again consulted me at my office in June, 1889, her physician being out of town—she having then been married some six months—saying that she thought she was pregnant; but having some pain on the right side of her abdomen, she had feared something was wrong and wished me to examine her. To my great surprise I found a tumor, of the size of a fist, evidently springing from the right side of the uterus and occupying almost the entire right half of the pelvic cavity. The symptoms of pregnancy at about two and one-half months were sufficiently plain to enable me to positively pronounce her so and to advise her to consult either her family physician or me again in September, in order to allow us to see what her condition then would be. Accordingly, in September last I saw her again with her family physician, and found the tumor very much enlarged, completely filling the pelvic cavity and pushing the uterus to the left, so that the cervix was almost out of reach. She was then

fully five months pregnant, and after consultation with Dr. Emmet, at the request of the friends, the, by me, already proposed induction of premature labor was carried out. After prolonged dilatation and with considerable trouble the uterus was emptied and the patient made a good recovery; and some three months after that, the tumor in the meanwhile having decreased considerably in size so as not to be larger than a fetal head, the patient entered my private hospital with a view to a reduction of the tumor by galvano-puncture, if possible, as she was anxious to have a family, and could not, evidently, be delivered per vaginam so long as the tumor remained. I made four galvano-punctures on her, which were rendered exceptionally difficult by the spreading of the bladder over the whole anterior surface of the tumor. I was obliged to introduce the needle into the cervical canal and then force it toward the right into the tumor, which was technically a very troublesome and somewhat hazardous task. After the first sitting under ether, which was not well borne, three other sittings were given without an anesthetic, the current to the strength of from 200 to 250 milliampères being passed through for five to ten minutes. No appreciable effect was produced upon the tumor during the four weeks occupied by this treatment, nor did the patient experience any decided local reaction; but after the third treatment her nervous system became prostrated, sleeplessness set in, and the appetite failed, so that I was reluctantly obliged to discontinue the treatment. It was evident to me, herself, and her friends that a continuance of the treatment would undoubtedly produce a return of the nervous prostration, from which she told me she had suffered several years prior to her marriage. An examination of the tumor two months after the cessation of treatment revealed absolutely no change.

CASE VI.—Miss J. M., age 26, from Michigan, consulted me at my office in November, 1889, for an abdominal tumor. I found a subperitoneal tumor, of the size of an adult head, springing from the right and anterior surface of the uterus. Uterine cavity three inches deep. The young lady was engaged to be married and was very anxious to have this tumor reduced, if possible. She entered my private hospital. Five galvano-punctures up to the limit of 250 milliampères, and eight intra-uterine galvanizations of the same strength, were made during a period of six weeks. The punctures produced considerable local edema, although there was at no time any rise of temperature. Then followed a shrinking of the pelvic portion of the tumor, with an apparent diminution of its upper part. I was quite elated, and hoped that a continuance of the treatment by the intra-uterine method would produce an en-

tire absorption, especially as the necessity for making the vaginal punctures in pretty close proximity, owing to the peculiar position of the bladder, rendered a continuance of those punctures undesirable; but I was mortified to be obliged to send this patient home, after almost two months' treatment, in no appreciably better condition than when she began.

CASE VII.—Mrs. D. L., from Ohio, entered my private hospital in January, 1890. A large, hard, apparently pediculated fibroid sprang from the anterior surface of the uterus and presented by several hard nodules in the anterior portion of the pelvic cavity. The presence of the tumor did not produce any particular pain; it had simply been growing slowly but perceptibly, and its presence annoyed the patient mentally more than physically. Six vaginal punctures were made, the needle being run fully to the depth of two inches through the anterior vaginal wall into the body of the tumor, which was held down firmly by an assistant while the current was passing. An anesthetic was not used, but the full strength of the current, 250 milliampères, was at first borne quite well by the patient, although causing her severe pain. After the fourth sitting the patient could not endure the current quite so strong, and after the fifth and sixth sittings there was a quite profuse discharge of blood from the bladder, although I am confident, as I carefully sounded the bladder beforehand, that that organ was not injured by the needle. After washing out the bladder with warm boracic-acid water, the hemorrhage ceased and no further trouble was experienced. The sittings were always from five to ten minutes, the latter amount when the milder currents were used. The mildest current employed was 125 milliampères. Considerable pain was complained of after each sitting, requiring an ice bladder for one to two days, and even longer, and rest in bed. No appreciable change was noticed in the tumor, except that after each sitting it seemed to contract somewhat, only to re-expand again a few days later. The patient returned home, satisfied that she had had all of this kind of treatment that she cared to stand. Six weeks later her husband wrote me that there was no change in the tumor.

CASE VIII.—A woman was admitted last January to my service at Mount Sinai Hospital with a soft tumor to the right of the uterus, of the size of a cocoanut. Her chief complaint was profuse menstruation. At first it was thought to be a multilocular cyst of the ovary, but on aspirating per vaginam only clear blood was obtained, and it was then recognized to be a soft myoma springing by loose attachments from the right side of the uterus. This tumor was punctured

four times in the space of as many weeks, a current of only about 100 to 125 milliamperes being passed through, that being the best the hospital battery could furnish at the time. About a dozen sittings of intra-uterine electrolysis were also administered during and after these punctures, but one month after the cessation of the treatment no appreciable difference in the size of the tumor could be detected. The menorrhagia, however, of which the patient had complained, was materially diminished.

As will be seen by referring back to the beginning of this article, I have thus employed vaginal galvano-puncture in ten cases of uterine fibroids, both of the hard and soft variety, with five complete cures. In one of the earlier cases I should say, however, that the cure is not a perfectly impartial one, because gangrene of the tissues along the track of the punctures took place, requiring thorough curetting of the two gangrenous canals and continuous drainage. This treatment may have had something to do with the shrinking and disappearance of the fibroid. The other four, however, were uncomplicated and clean cases of absorption of fibro-myomas of the uterus through galvano-puncture. Of the six cases in which I have employed intra-uterine galvanization (the true Apostoli method) for a sufficient number of times, that is, from ten to thirty sittings, I have not been particularly successful in producing any marked effect upon the tumor. The symptoms, it is true (menorrhagia, pain, pressure, feeling of weight and bearing down), have been more or less relieved: but further than that, so far as I have been able to trace the cases, there has been no curative result from the treatment. With the punctures, however, the case stands entirely different. Of ten cases, four certainly were cured entirely by the punctures, and one other at least partially so. Naturally I therefore prefer the vaginal puncture to the intra-uterine treatment. I do not mention the abdominal puncture, because I think it entirely too risky and uncertain, although I am aware that it has been and still is practised by gentlemen, whose experience and skill certainly quite equal my own, who report good results with but little risk from this method. Still I prefer not to employ a method the risk of which is out of proportion to the danger of the disease.

So far as I can judge, soft tumors are more likely to be absorbed than hard fibrous ones.

While thus preferring the vaginal galvano-puncture, I will not deny that it is attended with certain risks likewise, chiefly the danger of septic infection. To avoid this I have always carefully irrigated the vagina with 1:5,000 bichloride solution before and after the puncture, and have kept a pad of bichloride gauze over the vulva for at least forty-eight hours after the sitting. I am also aware of the danger of injuring a large vessel or of puncturing the bladder; but these accidents can, I think, be avoided by careful exploration of the bladder with the sound and the search for pulsating vessels. One great drawback to vaginal galvano-puncture is the fact that only a comparatively small proportion of fibroid tumors is readily accessible through the vagina, and even then, as already mentioned, the bladder may frequently be in the way. Of course a fibroid may present behind the cervix, and then be as readily accessible to the needle as if it were situated in front. Of late I notice that electro-therapeutists—I mean those who devote much of their attention to gynecological diseases—have arrived at the rather inexplicable conclusion that the strong currents up to 250 milliamperes or more, which were first thought by Apostoli to be absolutely indispensable for the absorption of uterine fibroids, are no longer necessary, and that 75 to 100 milliamperes answer the purpose quite as well. While I will admit that the exact chemical and nutritive changes which the galvanic current produces in live animal tissues, so as to permit and produce their absorption, or, perhaps better, retrograde metamorphosis, are uncertain and by no means explained by all the long-winded theories which I have heard adduced, I confess that it seems to me more logical that the stronger the current passed through a living tissue the more decided will be the influence it exerts upon its life and nutrition. Hence I think I shall continue to use as strong a current as the patient's local and general condition will permit. It is true that it is still a question of doubt, and one which only experience can settle, as to whether a strong current transmitted for a short time, or a milder transmitted for a longer time, produces the more decided changes and is the more desirable. Questions of this nature I am afraid I shall

have to leave to those who make electro-therapeutics a specialty and a life study. I am simply endeavoring to formulate my own experiences, and to record what practical value electricity seems to me to offer in the treatment of the diseases which I make a specialty. If what I have seen and described can in any way aid others to a clearer understanding and a more practical employment of electricity in these diseases, I shall have done all that I intended.

I presume I shall be criticised for venturing to record my experience with the electrical treatment of fibroid tumors on the basis of so small a number of observations as ten cases of vaginal puncture and six cases of intrautero-abdominal galvanization. I am well aware that Apostoli cites his cases by the hundreds, and that many others exceed my figures. But still I believe that I have given the method a fair and impartial trial, and through careful observation and study of my few cases am entitled to express an opinion on the subject.

Did I not feel that, relatively speaking, but a small number of fibroids require electric or any other treatment, I could easily have doubled and quadrupled the number of my cases—always provided that my time would allow me to devote so much of it as is needed to this mode of treatment. Quite as much as in other special branches of practice does this treatment require the undivided attention of the practitioner in order to arrive at positive and satisfactory results.

THE TREATMENT OF POSTERIOR DISPLACEMENTS OF THE UTERUS.¹

BY

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It is evident to all that posterior displacements require as much variation in treatment as there are complications with, and causes for, the faulty position; but the time is too limited to enter into the details of the subject. I wish to invite your

¹ Read before the New York Obstetrical Society, March 18th, 1890.

attention to some of the conditions in which surgical measures must be adopted in order to secure a successful result. Although the object in view is alike in all cases, viz., to place and keep the uterus anterior, the particular procedure must necessarily differ with individual patients and conditions.

It is generally admitted that displacements, as such, produce none but mechanical symptoms. The various pains and aches, or reflex phenomena, of which such patients complain, are caused by the pathological conditions which complicate the malposition.

In an excellent paper read before the American Gynecological Society at its last session, Dr. Wm. M. Polk dealt with a similar subject; hence it will be needless for me to take up the time with methods considered by him.

It is, of course, obvious that defects existing in the pelvic floor must invariably be remedied if we expect our treatment, whether ambulatory or surgical, to be successful.

I take the standpoint that all surgical interference must be limited to selected cases; should operation be necessary, one which utilizes the already existing supports of the uterus ought generally to be chosen. The latest of these procedures is that introduced by Frommel,¹ who utilizes the posterior suspensory ligaments as follows: The abdominal section is made in Trendelenburg's posture, and, after separating the adhesions and holding the uterus well forward, the posterior peritoneal reflexions are surrounded with a suture near their uterine insertion and fastened to the lateral pelvic peritoneum. The effect is that instead of the bands going more or less in a straight direction towards the rectum, they are caused to deviate at a right angle, thus practically shortening them and throwing the body forward. In the case reported the operation was not successful, the failure being due, according to the operator, to the suture material used. Another and seemingly an excellent method recently carried out by our fellow-member, Dr. Dudley, is the one to which he has applied the term "uterine desmopexy." Through his courtesy, the privilege of examining his patient was extended to me, and the result that I found at that time was all that could be desired.

The main steps in this operation are the denudation of the

¹ See *Centralblatt für Gynäkologie*, No. 6, 1890.

anterior surface of the uterus and the broad ligaments, which latter are stitched to the raw uterine surface, thus shortening the lateral suspension bands and thickening the anterior uterine wall, making it also a trifle heavier in weight. The round ligaments are now shortened and given a lower attachment by folding them in; they are also sewn to the anterior surface of the uterus.

A third new method is that adopted by Kelly, who attaches the ovarian ligaments to the parietal peritoneum. The three cases so operated upon by him have done well, the uterus being thrown into as near a physiological position as it is possible to accomplish with any operation. (See *The Johns Hopkins Hospital Bulletin*, No. 2.)

The great majority of fixations can, however, be freed by manual manipulation, according to the method of either Schultze or Brandt, with the latter of which I have dealt at some length on a previous occasion.¹ Two of the surgical methods adopted by me, upon which I will take the liberty to report, are ventral *suspension* and ventral *fixation*. By suspension is meant the approximation of the uterus to the parietal peritoneum by means of one or more sutures; whereas in fixation the uterine serosa is in addition scraped off to a limited extent from the anterior surface of the fundus, thus absolutely necessitating fixation by adhesions. If the respective case is such as to promise a good ultimate result by suspension, then this is as good as any direct method known to me, because it is very simple and done in less time than any other operation, which is of considerable importance in some cases, and the adhesions, if any form at all to the parietal peritoneum, are so slight that should pregnancy ensue in the future it will not be interfered with by them. This is evident from the technique of the operation—viz.: After breaking up the adhesions, which I have seen so dense that the use of ligature and scissors was required to sever them, a silkworm-gut suture is threaded in a coarse needle for the parietes; after these have been pierced, a fine curved needle without cutting edges is exchanged for the coarse needle, and the suture passed beneath the uterine serosa at the fundus, taking in about one inch of surface; then the exchange is again made for the coarse needle

¹ AMERICAN JOURNAL OF OBSTETRICS, vol. xxii., p. 579.

and the opposite parietal wall pierced. The rest of the sutures to close the abdominal incision are placed in situ, and a sponge on a handle is introduced into the cul-de-sac to ascertain the amount of bleeding from the torn adhesions; we must also make sure that there are no intestines in front of the uterus. Everything being in order, the suspending suture is tied, and then the rest of the abdominal incision closed. The smallest pessary suitable for the respective case should at once be inserted to take off the strain of the uterus on the suture. The supporter must be worn for a variable period of time. After the lapse of one week the silkworm suture is cut, to prevent burying into the integuments, but it is not entirely removed for two weeks.

The indications for this particular operation are: when the uterus is fixed so firmly that local treatment is of no avail, or when we have reason to believe that such a form of tubal or ovarian disease coexists with the malposition that manual treatment is contra-indicated. If, on opening the abdomen under such circumstances, we find that the disease of the adnexa is not suppurative, a hydro- or hemato-salpinx, the appendages should not be indiscriminately removed just because the patient complained of pains referable to the tubes or ovaries, for the reason that probably, when the perimetritic adhesions which hold the uterus in its pathological position are broken up and the adnexa are freed, these organs will eventually be restored to a normal condition, either with or without subsequent treatment. I have had the good fortune to prove this to my own satisfaction, as will be seen from the cases to be narrated. Suspension is, however, not applicable to cases in which we have a flexion angle atrophied to any marked degree, or when the natural supports are relaxed and atrophied to such an extent that their subsequent physiological usefulness cannot be relied upon, so that the organ would probably subsequently fall back again, with eventually a formation of fresh perimetritic adhesions and renewal of the old trouble. In that class of cases the operator must judge which of the various operations already practised would be the most rational. I do not see any practical objection to the denudation of the uterine serosa to the extent of 1.5 to 2 square centimetres and making a *fixation* with two or three sutures. For illustration

barring my own observation of pregnancy after this treatment. I refer you to the cases of recurring pregnancy after Cesarean section, when we almost invariably have adhesions to the anterior wall; a marked example of which is mentioned by Dr. Howard Kelly in the case of Mrs. Reybold in the March number of the *AMERICAN JOURNAL OF OBSTETRICS* of this year. Yet it is but proper to limit this procedure, until more is known as to the ultimate condition of patients so operated upon, to those cases where the appendages have been removed, or where the likelihood does not exist of future impregnation. A ventral fixation of some kind should always accompany double ovariectomies or salpingectomies when the uterus is posterior, else I should not consider the operation complete.

As will be seen from the cases treated by ventral fixation and suspension, we have every reason to give this mode a favorable consideration, despite the fact that the non-pregnant uterus belongs in the pelvic and not in the abdominal cavity.

My first case was done on March 17th, 1887. The patient was 34 years old, and had been suffering intensely for two years, the illness following an attack of general peritonitis for which no cause could be found except "a cold." The tubes and ovaries were enlarged, very sensitive, and adherent. The uterus was held posterior by a broad, short, and very thick adhesion which required the use of scissors. After separating all the adhesions a silver-wire suture was used to suspend the uterus. The pessary which was placed in situ immediately after closing the abdominal wound was worn only three months. The result is satisfactory in every respect: the former ovarian pains, excruciating dysmenorrhea, etc., have entirely disappeared; the uterus is anterior and freely movable. Examined in my clinic on March 19th: uterus is still in good position, and she feels perfectly well.

CASE II.—E. C. had had salpingotomy and ovariectomy performed on previous occasions. On March 5th, 1888, the abdomen was opened a third time to relieve her of the distressing pain caused by an adherent, retroflexed uterus. Ventral fixation was difficult; the hemorrhage so profuse as to require an intra-abdominal tampon of iodoform gauze for twenty-four hours, and a vaginal packing as counterpressure to control it. Patient was lost sight of after a few months, but when last seen the uterus was anterior.

CASE III.—C. S., 48, single, domestic. Patient had been unable for a long time to attend to any work on account of

intense suffering, consisting of backache, pain in both ovarian and hypogastric regions and in the thighs. The uterus was bound firmly posterior, and both ovaries enlarged, cystic, and adherent. Operation April 23d, 1888. The adhesions were broken up and the uterus suspended. Discharged from the hospital five weeks subsequently; uterus anterior; patient feels much easier, although not quite free from pain in the ovarian regions; other pains have entirely subsided. Seven months after operation she is entirely well.

CASE IV.—B. H., 38, multipara. Had similar symptoms, but in addition epilepsy and at times psychical disturbance. The examination revealed a condition similar to the previous case. The operation by suspension was done on May 7th, 1888, and was successful as regards keeping the uterus anterior for the length of time that the patient could be observed, *i.e.*, two months. The psychical disturbance and ovarian pains were not relieved. She died subsequently, as near as I could learn, of some form of insanity.

CASE V.—M. N., *æt.* 29. Operated May 28th, 1889, by ventral *suspension*. The symptoms and condition were much the same as in case 3. Seen six months later, and the uterus was still in normal position. She was relieved of all except the symptoms produced by an oöphoritis, on the left side, of moderate severity. A note in my history book states that she was also seen and examined by Dr. C. C. Lee, who corroborated the physical condition. I was informed by a relative a few weeks ago that the patient is perfectly well now and able to attend to her duties as a domestic, which she could not do prior to the operation.

CASE VI.—A. S., operated on January 25th, 1889; 26 years old; married one year; had one child four months previous, since which time she has been suffering unbearable pain in the lumbar region, thighs, and abdomen. Had chills and fever. The uterus was firmly adherent posteriorly, and a fulness existed on either side. The abdomen was opened in the expectation of finding puerperal suppurative salpingitis as a complication. Though the adnexa were enlarged and adherent, it was not considered that the acute salpingitis required treatment by salpingotomy. The perimetritic adhesions of the uterus and appendages were broken up, and the uterus attached to the anterior abdominal wall after denuding the serosa for fully a square inch. The patient on the third day developed a severe croupous pneumonia, but eventually made a good recovery. When seen six months later the uterus was anterior, positively adherent to the parietal peritoneum, and her condition was excellent in every respect. When last seen, quite recently, she was

four months pregnant, without the slightest inconvenience and her health and physical condition all that could be desired. The uterine serosa was scraped off to see what effect pregnancy would produce should it occur.

CASE VII.—Operated June 3d, 1889. C. E., æt. 33, widow; one child sixteen years ago. Patient had suffered constant misery since the birth of the child, and had during that time been in the care of a number of physicians without benefit. She was also treated by me with pelvic massage, electricity, etc., without producing any change for the better as regards her own feelings. The uterus was firmly glued down by broad adhesions; both ovaries and tubes tightly adherent and enlarged, exceedingly tender to touch. Ventral fixation after denudation of the serosa. Seen by me yesterday: the uterus is in good position; on account of her avocation, which requires constant physical exertion by standing or walking, she at times experienced a dragging sensation, which is, however, completely relieved by the use of a pessary; menstruation and bowels are regular and absolutely free from pain—which had not been the case since the beginning of her illness. She is now perfectly well and a picture of health compared to her former physical condition.

CASE VIII.—A. C., widow, 30 years old; four children, the last born four years ago. Suffered from a long train of symptoms due to the complications of a retroflexion. Uterus enlarged but mobile. An extensive laceration of the cervix. Could not wear a pessary of any kind, the body tipping over the upper bar. Operation June 9th, 1889. First repaired the lacerated cervix, then attempted to shorten the round ligaments. The ligament operated upon broke off in the inguinal canal, and I could not have reached it again without opening the peritoneal cavity. Fearing that the same thinness of the ligament might exist on the other side, I preferred to make a median incision and attach the uterus by ventral suspension. The uterus was anterior at the time when the patient left the hospital, but I have unfortunately been unable to trace her for the purpose of ascertaining her present condition.

CASE IX.—A. L., æt. 32 years, widow; two children; no abortion or miscarriage. Last child was born six years ago. Menstruation began at 15, and up to the time of her present illness she had always been regular, every four weeks, the flow lasting four days. No dysmenorrhea. Bowels were regular. No bladder symptoms. Her illness dates back four years, and consists of constant pain in the left ovarian region and back-ache, so intense that she is unable to do any work. In addition, frequent "bearing pains" in the hypogastric region are a

distressing accompaniment. Frontal headache is without intermission, but more severe at times. Menstruation is irregular, occurring at intervals of from two to three weeks, and lasting two to three days, but a large quantity of blood is lost during the period. Very intense dysmenorrhea. Bowels are constipated. Status in March, 1889: Perineum lacerated. Vagina unusually flaccid. The anterior wall, with a cystocele, protrudes from the vulva. Rectocele. Uterus descended, retroflexed with version, but broad and firm adhesions hold the organ in its pathological position, so that it cannot be brought anterior, although slightly movable. The right tube and ovary are much enlarged, very sensitive, low down, and adherent. The left adnexa is sensitive to touch, but not markedly enlarged. Operation June 28th, 1889. Ventral fixation and repair of defects in pelvic floor. In doing the hysterorraphy the needle broke off in the substance of the uterus and buried itself so deep that it could not have been extracted without considerable cutting; it was therefore left in, and has not caused the slightest trouble. The uterus is anterior and mobile, though the attachment to the parietal peritoneum is readily appreciated. There is a little tenderness still in the right ovarian region, on *deep* pressure, yet practically the formerly intensely inflamed appendage has assumed a normal condition. As regards the descensus vaginæ with cystocele, it is also cured. She is now equally as free from discomfort as case 7, and does her duties as domestic without the slightest inconvenience.

CASE X.—Mrs. S., æt. 32; IIpara, and one abortion at the third month. Her illness dates back two years. The symptoms and physical condition are similar to those in the previous case, as is also the result from operation, which was done on June 25th, 1889.

I am satisfied, from careful observation of my patients, that the perimetritis, salpingitis, and oöphoritis coexisting with many cases of retroflexion will subside after the uterus has been anteposed by some method; further, that practically the method practised a number of times by me is equally as effective as those practised by many of my colleagues, and excels all in the saving of time. Yet I reiterate that it depends entirely on the particular case which procedure is preferable. In consequence, eclecticism is necessary.

We meet with cases occasionally where we intend to operate only with a view to break up the adhesions and correct the displacement; but upon opening the abdomen it is found that

the disease of the adnexa on one or both sides is so extensive as to leave the repair by natural means entirely out of the question. Such cases have been encountered by me several times, so that the operation, instead of being a hysterorrhaphy, has turned out to be a salpingo-oöphorectomy, and the ventral fixation the auxiliary measure. I therefore do not enumerate these cases among the operations mentioned. I will also say that in one instance of this class the operation has, as concerns keeping the uterus anterior, been a failure. The suspension method was used.

From the perusal of reported cases operated by anteflexing the uterus with a utero-vaginal suture, according to Schuecking, of Pymont, that method also deserves a trial in suitable cases, and I hope to be able to contribute my experience with it soon.

B. S. Schultze's method of forcibly breaking up adhesions formerly seemed to me to be fraught with too much danger to be carried out in practice: but, from the cases published and a limited personal experience, I am convinced that, with proper care, no serious consequences will result in suitable cases, although, if time is no object, I unhesitatingly would give the preference to the manual treatment after Thure Brandt's method.

All displacements amenable to treatment with pessaries should be so treated. The pessaries must be selected with great care. We have all seen the most intense direct and reflex symptoms, due to posterior displacements, removed by the wearing of a perfectly fitting pessary. A few unusual cases may not be amiss to serve as illustrations:

The first is the most marked example which has occurred in my practice. The patient is now 42 years old, married nearly twenty years. Has had four children and two abortions; the last child was born two years ago. For several years prior to the time when the patient came under my observation she complained of insomnia, loss of appetite, a feeling of fear and anxiety; she had hallucinations and illusions; occasionally left her home because she imagined herself persecuted there. Several times she was prevented from committing suicide, so that it was necessary to keep her under constant observation. For a time she had been confined to the care of a private asylum, and, although under the care of different physicians at

home and in hospitals, a vaginal examination had not been made. In the fall of 1883, when the patient was referred to me, she looked haggard and anemic, complained of general malaise and the symptoms already mentioned above. On closer interrogation she stated that there were present lumbar and hypogastric pains, which about the menstrual period became very much intensified, so much so that she could scarcely leave her bed. The bowels were extremely sluggish, to such a degree that unless a cathartic was used she would not have a movement oftener than once in from ten to fourteen days.

The uterus was found slightly descended, indurated and large (hyperplasia), retroverted; a bilateral laceration of the cervix and an enormous rectocele. The uterus measured $3\frac{1}{2}$ inches; not very sensitive to touch, and quite movable. The proposal to sew up the existing lacerations was met with refusal, and on account of her mental condition not insisted upon.

For a short period the patient was treated with borated glycerin tampons, and these were followed with a well-fitting retroversion pessary, besides general treatment and good hygienic surroundings. In the course of six months she had improved beyond recognition, and all symptoms of her former melancholia with suicidal intentions had disappeared. She was discharged and requested to return once every four weeks to have the pessary seen to. After another interval of three months, at her urgent request the supporter was removed. Six weeks after this she was brought to me again with a gradual return of her former symptoms. The uterus was at once replaced, and in a few weeks good health was the result, which had continued up to one year ago, when the patient was last seen by me. She had had the lacerations operated upon after the birth of her last child, but it was necessary to continue the use of the pessary. It is in such cases that the Alexander or other indirect operation could be performed with good result, if dispensing with the pessary were necessary or desirable.

CASE II.—Mrs. S. K., æt. 35 years; married ten years; had two children, the last seven years ago; both labors were normal. The illness dated to a short period subsequent to her last delivery, consisting of headache, tachycardia, nausea and vomiting, backache, and blurred vision. The headache, nausea, and vomiting were most intense and nearly constant. I have seen the nausea and vomiting so persistent about the menstrual epoch that it became necessary to use nutritive enemata for three to four days. Menstruation was irregular and profuse. The condition existing was an enlarged prolapsed ovary, retroversion, endo- and perimetritis. Three

months' treatment sufficed to restore the patient to perfect health. In this case a number of months had elapsed before the patient could be induced to permit a vaginal examination; it was only due to her becoming worse from month to month that she finally submitted.

The relation between eye troubles and the uterus are known to us all. I need only refer to the works of Mooren and Salo Cohn on this subject.

Nuel, "*Des Amblyopies Réflexes*," page 700, cites the interesting case of a widow whose physical strength had been gradually diminishing for several years. During the past few months she had lost her sight to such an extent that she could not find her way alone. An examination showed that on the right side the sight was completely destroyed. With the left eye she could scarcely count fingers at a distance of two and one-half metres. Perception of colors was entirely lost; both pupils were slightly dilated and reacted slowly to light. On the right side the ophthalmoscope showed a cloudy gray color as in moderate infiltration. The contours of the papillæ were cloudy. On the left side there was only a moderate hyperemia of the papillæ. The urine contained neither albumin nor sugar. The patient also complained of dyspnea, depression of the chest, headaches, tinnitus aurium, pain in the abdomen, hips, etc. After replacing the uterus and inserting a proper pessary, with general and other local treatment, she rapidly recovered and also regained her sight. As a proof that the eye affection was due to the displacement of the uterus, it need only be said that after removal of the pessary by herself her vision became impaired again, but was restored by the reposition of the uterus and wearing a pessary.

Cohn notes a case of double optical neuritis, due entirely to retroflexion, cured after replacing and supporting the uterus with a pessary. I myself have seen several instances of impaired vision in posterior displacements corrected by the wearing of pessaries. It is obvious that merely the correction of the displacement alone will not suffice in the majority of cases, but that other local and general treatment must be instituted. However, all treatment is useless unless the displacement which primarily gives rise to the complication is corrected.

Those posterior displacements, with or without more or less

fixation, where there is excessive tenderness in the parametria, and where there is oöphoritis, salpingitis, or both, associated, especially require great care and gentleness during treatment. They are also generally complicated with great sensitiveness at the os internum.

Here tampons, impregnated with a saturated solution of iodide of potassium in glycerin (1 to 2), answer an excellent purpose. The medicaments may, however, according to indications, be changed, viz., alum, boric acid, tinct. of iodine 1 part to 60 parts of glycerin, either of these singly or in combination. Usually no attempt should be made to replace the retroverted or retroflexed uterus until the sensitiveness of the surroundings has been diminished.

THE LIMITS OF VAGINAL HYSTERECTOMY FOR CANCER OF THE UTERUS.¹

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“OPERATIONS for a disease which give unjustifiable secondary results have no place in good surgery,” says Tait in dismissing the subject of vaginal hysterectomy. While this is only an individual opinion, not based upon a careful study of statistics, it is that of a daring surgeon who has never shrunk from the most formidable operation, and as such it is deserving of respect. Doubtless it will have little or no influence upon the enthusiastic advocates of the radical treatment of uterine cancer, and naturally the following brief paper will have still less. The writer's purpose in presenting a paper, which partakes of the character of a personal confession, is simply to abjure an error into which he believes that he has fallen, fortunately at the outset rather than at the end of his professional career. Though from a scientific standpoint his

¹ Read at a meeting of the New York Obstetrical Society, March 4th, 1890.

statistics may seem to be too few and unfavorable, as compared with those of others, to justify the expression of a positive opinion, he wishes to present them before they become larger—and worse. If it can be shown that within the short space of two years the most mournful results have followed vaginal hysterectomy, it is not necessary to wait four in order that all the patients may be reported as dead. All that he can say in favor of these statistics is that they may be thoroughly relied upon; they are too bad to be other than true. We present specimens of cancerous uteri here and describe the operations for their removal; but all these merely serve to show to our professional brethren our activity in surgery—what we are doing, not what we have done. John Williams goes to the root of the matter when he says in his “Harveian Lectures” for 1886: “I cannot conceive any good object in operating upon a patient on a Monday and reporting her case on a Thursday, and then burying it out of sight forever.”

It is a matter for congratulation that American surgeons, prompt as they are to adopt new operations, and bold and ingenious as they are in developing them, even beyond the limits prescribed by their originators, are naturally conservative, and are more disposed to consult the interests of the patient than their own fame or desire to test thoroughly a certain method. This has been particularly marked in respect to vaginal hysterectomy. We can show no such statistics as the Germans. American gynecologists of large experience have not had over a dozen cases; not a man in this country can point to his thirty or forty. Is this a matter for regret? No; let us be proud of the self-control and humanity of our countrymen. I say “self-control,” because it requires no small amount, especially in a young surgeon, to refrain from performing a brilliant operation in a case in which it is not only sanctioned but is strongly advised by the highest authority.

Baker sought to stem the tide of popular enthusiasm in favor of vaginal hysterectomy six years ago, and his effort was a notable one; then Reamy, whose name is a synonym for all that is honest and true, threw his powerful influence into the scale; now in rapid succession we have the convincing statistics of Byrne and the short, stirring paper of Reeves Jack-

son, which goes straight to the heart of the matter with its keen, pitiless logic. All these powerful attacks upon vaginal hysterectomy have been made by Americans—by men whose names alone are sufficient warrants for the accuracy of their statistics. It seems to me that it is our duty to support these bold reformers, and that, too, in no uncertain way. It is time for us to come forward and say whether we have found in vaginal hysterectomy all that has been claimed for it by its ardent advocates. If this brief paper serves to elicit from you a general and honest expression of opinion, it will have accomplished its purpose and the author can well afford to bear any odium which may result to himself. It is unnecessary to rehearse in your hearing the literature of this subject, which is most voluminous. One could not add anything which would strengthen Jackson's arguments if he tried. Even the recent favorable statistics of Fritsch, and the almost unanimous plea of his countrymen for the radical operation, do not outweigh the former's simple statement of facts.

During the past two years and a half the late Dr. Hunter and the writer performed nineteen vaginal hysterectomies, twelve having been done by the former. In every instance but one the patient was under the writer's exclusive care after the operation, and (with a single exception) her history has been obtained up to date. In selecting cases for the radical operation the following conditions were assumed as justifying it: 1. That the vagina should not be extensively involved; 2. That the disease should not have extended to the broad ligaments, as far as could be determined by examination under ether; 3. That the uterus should be fairly movable, though Meyer's indication, that it should always be possible to draw the cervix through the vulva, was not regarded as essential; 4. That the organ should not be too large to prevent its easy removal per vaginam.

It must be admitted that a few of Dr. Hunter's earlier cases seemed to the writer to be unsuitable for operation, on account of the poor general condition of the patient; but these women did as well as others who were in excellent health, and had a recurrence no earlier. In two or three instances it is certain that the broad ligaments were diseased and that the operation ought not to have been performed. But here again we cannot always

decide what it is best to do. The indurations at the bases of the broad ligaments may be of purely inflammatory origin, as the subsequent history of the patient will show. Let us analyze the nineteen cases referred to. Of these, in fourteen the disease was confined to the cervix, in five to the body of the uterus. Forcepressure was employed in all but one case. Five patients out of the first class succumbed to the operation—one from secondary hemorrhage due to the slipping of a clamp, one from exhaustion (the patient ought not to have been operated upon), one from uremia, and two from intestinal obstruction (the writer's own cases, which have already been reported). The sixth case was also one of his, the operation being unusually easy, but the patient had a diseased heart and contracted kidneys, and succumbed on the fourth day. She ought not to have died. Of the thirteen patients who survived the operation the following is the mournful history: Case 1, which was not by any means the most favorable, had a recurrence in eighteen months, the entire base of the bladder being involved. Case 7 was the most favorable of all. The patient was in robust health, was absolutely free from bad symptoms, and the disease was confined to the fundus uteri. The operation was easy and the convalescence normal. This patient returned within twelve months with a recurrence in the cicatrix, and both the rectum and the bladder are now involved. Two patients (cases 9 and 11) had a recurrence within seven months. In one instance the patient had an easy convalescence, while in the other it was protracted on account of a cardiac lesion. In case 5 the disease was limited to the portio vaginalis and the patient was a young woman in excellent health. The operation was easy, and she was up and about at the end of the third week. Within six months she returned, only a shadow of her former self, with extensive recurrence involving the bladder and the rectum. In cases 2, 4, and 9 there was a recurrence within two months after the operation, justifying the inference that all the disease had not been removed at the time. These were by no means complicated cases, however, as the epithelioma was to all intents confined to the cervix, and the uterus was movable. Case 6 (operation seventeen months ago) is the only one from which no report has been received. Case 13

is now well, at the end of eleven months. In cases 15 and 16 it is too soon after operation (four months) to predict the permanent result, and case 18 is only in the third week of convalescence. Here is the summary: Died, 6; recurrence within eighteen months, 1; recurrence within twelve months, 1; within seven months, 2; within six months, 1; within two months, 3; not heard from, 1; well at the end of ten months, 1; too soon to determine, 3.

With regard to the high rate of mortality, attention should be called to the fact that one death was really accidental, being due to the slipping of a pair of forceps which included the left ovarian artery, while in two of the writer's fatal cases it was necessary to perform laparotomy for the relief of that rare complication—intestinal obstruction—only ten cases of which have been reported out of twelve or fifteen hundred vaginal hysterectomies. Granting that in three of the fatal cases there may have existed contra-indications to the radical operation, in the other three death was due to unusual, not to say to accidental, causes.

The writer's own statistics are of no value as regards the question of recurrence, since the operations were all performed within the past year; they are introduced simply to call attention to possible unavoidable dangers.

In presenting these very unfavorable statistics the writer is well aware that they are open to serious criticism in the following respects. It may be urged:

1. That some cases were unsuitable for a radical operation.
2. That the disease was not entirely removed at the time of operation.
3. That the technique was defective.
4. That the statistics are among the worst that have been presented, hence it is unjust to compare them with the much more favorable results of operators of wider experience, especially on the Continent.

In regard to the first objection, it need only be said that the first twelve of these patients were operated upon by the late Dr. Hunter, whom you knew as an accomplished diagnostician and a conservative surgeon. The writer personally examined all but one of the patients, and, in the light of subsequent experience, he believes that in the three in which a recurrence

took place within two months the broad ligaments had become involved to such a degree as to contra-indicate total extirpation of the uterus. At the same time this was not supposed to be the case at the time of the operation, else it would not have been performed. A careful examination of each patient was made in order to exclude serious visceral complications, but the presence of transient albuminuria (even if a few casts were present) was not regarded as a positive contra-indication, otherwise many women with cancer of other portions of the body would be allowed to die unrelieved; its frequent occurrence is noted in patients with cancer of the uterus. With perhaps one or two exceptions, we were guided by Greig Smith's rule, viz.: "The patient must be in fair health, with a prospect of average longevity from general soundness of organs apart from the malignant disease."

Was the disease entirely removed at the time of the operation? So far as it was possible to determine, this was true in fifteen. The others are open to suspicion, if we accept Jackson's inference that "whenever symptoms of so-called recurrence are manifested within a few months after an operation, it may very generally be accepted that the fact indicates a continuance rather than a recurrence, and that the disease in such cases has only been partially removed."

In this connection the writer would say that he places little confidence in Dr. E. C. Dudley's statement that by the use of the forceps we cause more extensive sloughing of the parametrial tissues, and thus affect favorably diseased portions of the broad ligaments which are not actually excised at the time of the operation. Sloughing there certainly is, but he has never observed such a result as Dr. Dudley describes. One can only remove diseased tissue which he can see or feel at the time of the operation; he cannot trace impalpable lymphatic infiltrations except with the scientific imagination. It is in the broad ligaments that the dangerous unseen foci exist, and there is a limit to the extent to which we can invade these tissues with either scissors or forceps without injuring the ureters, unless the latter be previously catheterized according to Pawlik's plan—a procedure which calls for unusual technical skill.

The writer feels some hesitation in replying to the third

objection, because it involves a seeming criticism of the surgical skill of one whose work is finished, who has been lifted beyond our praise or blame. Your personal knowledge of the late Dr. Hunter's special skill and experience will assure you that, so far as his own operations were concerned, they were performed as carefully and conscientiously as would have been done by any other American surgeon. In the writer's last unfortunate case he can explain the fatal termination by the fact that, owing to the perforation of the softened fundus uteri by the vulsella, a small quantity of sarcomatous material came in contact with the peritoneum. Thorough irrigation was practised. The same thing occurred in two previous instances without bad consequences. Granting that the technique in this case was defective, in the two fatal cases of intestinal obstruction death must be regarded as unavoidable. He can only add that in all his difficult and complicated cases the patient made a good recovery.

He is willing to admit with German writers that only those of large experience can hope to perfect their technique to such a degree as to reduce their mortality even lower than Fritsch's (6-8 per cent). The same applies to abdominal section, as shown by the statistics of some of our own Fellows. He does not believe that every one should dabble with laparotomy, nor is it justifiable for every gynecologist to aspire to report two or three, or half a dozen, cases of vaginal hysterectomy. Still, the question naturally suggests itself: "How can a man acquire skill in the performance of a certain operation unless he gives it a fair trial?" It is not, he would have you understand, the immediate mortality of vaginal hysterectomy which will deter him from performing it as freely as he has done in the past. When you ask if defective technique would account for the rapid recurrence in the cases reported (excluding the three in which it is assumed that the disease was not entirely removed at the time of the operation), he can only say that this may have been the explanation.

To the fourth objection, that it is unfair to condemn an operation from such manifestly unfavorable statistics, the writer assents, but with this qualification. The statistics of Martin, of Fritsch, and of the Dresden clinic represent the results of operators of exceptional experience. It is not likely that

any surgeon in this country will ever attain to the same technical skill, because he will never perform one-third as many operations. But vaginal hysterectomy is lauded as an operation which may safely be performed by the average man of limited experience. It is for this reason that a study of the statistics of occasional operators is of vital importance as showing the general average.

In order not to extend this paper unduly, the writer will not dwell upon the points which have already been emphasized by Dr. Jackson, but will simply present his reasons for abandoning vaginal hysterectomy except in the most favorable cases of malignant disease of the corporeal endometrium. The latter affection has been discussed at length in a recent paper read before the State Medical Society. Laparo-vaginal hysterectomy for cancer of the uterus is such a formidable operation that there are few cases in which it would be justifiable. In the first place, the immediate mortality from vaginal hysterectomy is high. Individual operators may present unusually favorable statistics, but the average death rate is certainly from ten to twenty per cent. There are unavoidable dangers (shock, secondary hemorrhage, uremia, intestinal obstruction) which we can hardly hope to overcome by the most perfect technique.

It is impossible by any of our present methods of examination to discover whether the disease is absolutely confined to the uterus or not. The fact that early recurrence of the disease occurs in cases which were apparently the most favorable, and nearly always at the border of the old cicatrix, shows that germs were hidden away in the perimetrial tissues even when it seemed to be in its inception. If the disease has already extended as high as the os internum, it is highly improbable that it has not also extended laterally along the broad ligaments. "The successful removal of a cancerous uterus is a very different thing from the successful removal of a uterine cancer." One does not see how this question is ever going to be settled except empirically, and that, too, at the expense of the patient. If there is a risk anyhow, why not take the lesser?

The operation is not curative. At best it only prolongs the patient's life, the limit of which we can never predict in cases

of uterine cancer, even if absolutely untreated. The highest authorities are at wide variance as to the duration of life in cancer of the cervix, the most pessimistic placing it at twelve months, while others allow from eighteen to twenty; in cancer of the corpus uteri Pichot states that the average duration is thirty-one months. It will be admitted by all present that one year is as long as the majority of patients can be expected to go without recurrence after vaginal extirpation. There are notable exceptions to this rule, especially in the statistics of the Dresden clinic, reported by Münchmeyer in October, 1889—eighty hysterectomies in six years, with only four deaths, and fifty-nine patients still living without recurrence, although it is probable that many of the operations were performed within the past year. Moreover, there are well-authenticated cases in which the patient was alive and well from six to ten years after removal of the entire uterus; but Martin's statement at the last International Medical Congress, that of two hundred and fourteen women operated upon successfully by Leopold, Schroeder, Fritsch, and himself, only five were living at the end of four years, shows what the average surgeon has to expect.

It has been said that even if a recurrence does take place, the patient is free from pain and the disease progresses but slowly and is amenable to treatment. This the writer positively denies. He has now four cases under observation. It begins in the cicatrix, progresses rapidly, soon involves the rectum or bladder, and little can be done to hold it in check, certainly nothing in the way of vigorous curetting, as there is imminent danger of opening the peritoneal cavity. The fact that some patients hold out so long after recurrence is because they were in the most favorable general condition at the time of the operation, and would have long resisted the disease if none had been performed.

A somewhat extensive experience in the treatment of inoperable cases of carcinoma has convinced the writer that with proper care the condition of these patients is really quite as endurable as is that of those with recurrence, except that the latter do not have as much hemorrhage and discharge. So far as regards the *radical cure* of cancer of the cervix uteri by extirpation of the entire organ, he is inclined to agree

with the concluding statement of Jackson's paper, viz.: "A hundred women with uterine cancer will live a greater aggregate of years if left alone than if subjected to hysterectomy."

He intends henceforth to perform vaginal extirpation of the uterus only in those cases of malignant disease of the corpus in which the organ is not too large to be readily delivered per vaginam, and is freely movable, in which a careful examination under ether shows no evidence of involvement of the perimetrial tissues or glands, while the patient's general condition is such as to offer a fair prospect of recovery from the operation and the enjoyment of several years of life. Under these circumstances he believes that the operation is clearly indicated to the exclusion of the sharp curette or the galvano-cautery, with which we only work in the dark and incur a certain risk of perforating the uterine wall and causing fatal peritonitis. Four out of his seven cases were of this character, which shows at least some attempt at selection.

If the disease is limited to the portio vaginalis, he will amputate the cervix, using the cautery or not as may be indicated. If the disease has extended beyond the portio, there seems to be no method of removal which has given better results than that practised by Dr. Byrne. His statistics are so eloquent that it is unnecessary to add one word in their praise. Certainly it is the duty of every man who has much to do with uterine cancer not to be wedded to any single method of operation. There must be cases to which each one is especially adapted. It is the interest of the patient, not our own advancement in surgical skill or reputation, which we should consult. The successful performance of a brilliant operation is one thing, but back of all lies—conscience.

After all, it seems that we are too much influenced by the praise or blame of our contemporaries. A coming generation will judge us more justly, unbiassed by the prejudices which sway us. Perhaps by them we shall be esteemed, not so much for what we have done, as for what we have tried to do in the cause of truth. "The fire itself shall prove each man's work of what sort it is."

In reply to queries addressed to several prominent conservative surgeons in this country and abroad, the writer has

received replies which it would be interesting to quote *in extenso*, if space permitted.

Professor Verneuil, of Paris, writes that he still adheres to his published opinions regarding the advisability of performing high amputation instead of vaginal hysterectomy. He adds: "Depuis cette discussion [before the Surgical Society] le nombre des partisans de l'hystérectomie vaginale a beaucoup diminuée en France et sur tout à Paris, pour deux raisons, d'abord parceque l'opération n'est pas toujours innocente, et ensuite parceque la suivre après l'opération n'est pas plus longue qu'après l'ablation du col seulement."

Professor Pawlik, of Prague, states that, although he entertains the same opinion as formerly with regard to the value of the galvano-cautery in the treatment of cancer of the uterus, he has had less opportunity to practise this method since leaving Vienna. "I consider extirpation of the whole uterus in most cases of carcinoma of the collum an unnecessary operation, though I have performed a good number of them myself for want of a better method and because I had no galvanic apparatus. But these operations have confirmed my former view, that in most cases it was not necessary to extirpate the body of the womb in cases of carcinoma of the collum, because it was healthy, and that to prevent recurrence of the carcinoma it was a great deal more important to extirpate the connective tissue in the neighborhood of the uterus, which in advanced cases is infected by the new growth a long time before the corpus uteri. Dr. Pawlik, in a recent paper entitled *Extirpation des Uterus und des Beckenzellgewebes*, describes an operation in which, after locating the ureters by catheterizing them, he boldly excises all suspicious indurations in the peri-uterine tissues. As he writes, his statistics as regards recurrence after this radical procedure have been quite satisfactory. No operator could do this successfully without possessing at least in some degree his special skill.

Professor Hofmeier, of Würzburg, writes that he has performed fifty vaginal hysterectomies with six deaths, as against thirty-three amputations with one death. He still affirms, however, that the more radical operation gives no better ultimate results; in fact, none of the enthusiastic upholders of vaginal extirpation have yet shown as favorable statistics as

those of the late Professor Schroeder's clinic which he published a few years ago.

Dr. L. C. Lane, of San Francisco, the pioneer in vaginal hysterectomy in America, writes that he still adheres firmly to his views with regard to the advisability of extirpating the entire uterus for the cure of cancer of the cervix. In two out of his twelve cases there has been no recurrence in seven years.

Dr. Reamy, of Cincinnati, kindly replied at length, but space does not permit me to quote his remarks *in extenso*. He states that he has performed twelve hysterectomies since January 19th, 1885, one patient dying of shock and one of uremic coma. In eight cases recurrence took place within less than twelve months after operation, in one within thirteen, and in one within fifteen months, and ten patients are now dead. "My own clinical work," he adds, "leads me to believe that vaginal hysterectomy is justified in but comparatively few instances," *i.e.*, in sarcoma and in primary cancer of the body of the uterus. "As set forth in my paper published in vol. xiii. of the *Gynecological Transactions*," he continues, "it is still my belief that in other cases than those above specified high amputation of the cervix affords better opportunity for removal of all diseased tissues than hysterectomy, and that after high amputation recurrence is not so likely to occur. Certainly my own results have been far more successful, as regards recurrence, by the minor operation. The brilliant results obtained by Byrne in amputation of the cervix by the galvano-cautery testify strongly on the same side of this question."

Dr. Henry T. Byford, of Chicago, writes that he has removed the uterus per vaginam eleven times for cancer of the cervix, and five times for cancer of the corpus uteri, with one death from delirium tremens. In one case recurrence took place in two months, in two in four months, in one in nine months, and one patient died at the end of ten months. In the first of six other cases, only nine months had elapsed since the operation. "Dr. William H. Byford," he adds, "has always performed amputation, but he has no recorded statistics. He reports quite a number living."

Dr. E. C. Dudley, of Chicago, informed the writer that he had performed six vaginal hysterectomies, five during the past two years. One which terminated fatally was unsuitable for

operation. Four of the five are without recurrence, and one patient is dead. Dr. Dudley thinks that "it is not yet time to render a positive decision." "The question now, in my judgment," he says, "is on the selection of suitable cases."

NINE CONSECUTIVE CASES OF MYO-FIBROMA OF THE UTERUS—EIGHT SUPRAVAGINAL HYSTERECTOMIES AND ONE MYOMECTOMY; NO DEATH.

BY

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In this JOURNAL for November, 1886, I published a series of thirty-three laparatomies, among which were five supravaginal hysterectomies with one death. I now report that since September, 1888, I have made eight consecutive removals of the uterus above the vaginal junction and one myomectomy, without a death. Of these tumors six were white (hard) and three were red (soft). Seven of the patients were married. Two were complicated with ovarian cystoma, and in two cases I had a urinary fistula which afterwards healed without trouble. In the last case, which was the most difficult, prolonged, and bloody of all, I had to deal with a fecal fistula. In one case I used both Tait's clamp and the elastic ligature on the pedicle. In two cases (one the myomectomy, the other in which a portion only of the uterus was removed) the stump was allowed to remain within the abdominal cavity. The other cases were all treated with the elastic ligature and pins, and the stumps left outside the abdomen. Other particulars regarding temperature, pulse, separation of pedicle, complications, and general treatment, can be found in the following abstracts of the reports of the cases:

CASE I. *Interstitial Myo-fibroma (white); Urinary Fistula.*—Miss B., from Baltimore, September 19th, 1888, age about 35 years. The tumor was very large, her emaciation extreme, and her exhaustion very great. On September 24th the tumor was with difficulty gotten out of the pel-

vie bed; the bladder was stripped down, a catheter introduced into it, pins inserted, and the elastic ligature put on. Tait's clamp as an additional precaution was also applied. The weight of the growth was twenty-six pounds. On the second day, temperature $99\frac{2}{3}^{\circ}$. A good deal of flatulence on the third day; temperature rose at night to $101\frac{2}{3}^{\circ}$. On fourth day temperature $100\frac{1}{4}^{\circ}$, and flatus escaped per rectum. On the fourth morning she complained that her dressings were very wet, and upon removing them her clothes and the sheets were saturated with fluid. It had a urinous color, and there was no doubt that the elastic ligature had been applied to some portion of the fundus of the bladder. After the pedicle came away (October 16th) an opening could be distinctly seen, nearly an inch in length, extending transversely across the summit of the viscus, from which the urine escaped. The wound was packed with iodoform gauze, and without an untoward symptom this lady recovered, the fistula healing as the stump cavity filled.

CASE II. *Interstitial Fibro-cystic Myoma (white) of the Uterus with Cystoma of Right Ovary; Supravaginal Hysterectomy.*—Mrs. B., age 33 years, admitted October 29th, 1888. About eighteen years ago she noticed a tumor on the left side of the abdomen; it grew for two years and then disappeared. Six years later she was married; had no children. Menstruated regularly till six years ago, when she gradually ceased. Simultaneously a tumor appeared in the old location. She is considerably emaciated; digestion good; cheerful and hopeful. Abdomen on exposure enlarged and rather pendulous; slight fluctuation; few points of adhesions; distinct ring of resonance surrounding the tumor.

Operation November 3d, 1888. Immediately on opening the peritoneal cavity a cyst appeared, and seven pints of fluid were evacuated through a Thomas' trocar. As the cyst wall collapsed a flattened fibroma appeared beneath, about five inches in circumference and two and one-half inches in depth. Lifting the entire mass containing the uterus from its cavity, the pedicle was transected by two Wilcox pins and the elastic ligature passed beneath them. The tumor being cut away, the stump was cauterized. Dressing consisted of iodoform, iodoform gauze, Linton moist gauzes and oiled silk, and held by a polytailed bandage.

During the night the patient's pulse, 118; temperature, $99\frac{1}{6}^{\circ}$. Vomited slightly at 8 P.M. and again at 1 A.M. At 1:30 passed urine unaided. On the morning after the operation powders of hypericum were ordered every two hours to relieve pain. On the third day (November 6th), and again on the tenth day, the temperature rose to 101° . On the tenth

day the wound was dressed and a considerable portion of the necrosed pedicle cut away. On the fifth day the patient had passed flatus (*signum salutis*). Pedicle separated on the fifteenth day, leaving a cavity, lined by granulating tissue, about one and one-half inches deep. On the twenty-second day some little pus was discovered at the bottom of the wound, from which time healing progressed rapidly. From the separation of the pedicle the wound was irrigated with peroxide-of-hydrogen solution. With the exception of the space left for the stump, the abdominal wound healed by first intention. An extremely prostrating diarrhea came on at the time of separation of the pedicle. Muratic acid relieved it almost immediately. Patient convalesced rapidly and returned home, four hundred miles from New York, fifty days after operation. April 15th, her physician brings word from the patient that she does her own housework and feels as well as when ten years old.

CASE III. *Large Fibro-myoma (white) with Dermoid Cyst of Left Ovary; Supravaginal Hysterectomy.*—Mrs. D., from California, age 37, admitted March 22d, 1889. Strong, healthy lady until two years ago, when she discovered a slight swelling on the left side near the groin; enlargement continued to increase in size until the present time; menstruated with considerable irregularity until February 13th, 1889, when she came East for operation. Put on strong diet, exercising slightly every day.

March 28th, 1889, at 2:15 p.m., had the usual hypodermic injection of atropine and morphine, one-one-hundredth grain of the former to one-sixth grain of the latter. The usual incision was made and few anterior adhesions found, but a large multiple dermoid cyst of the right ovary and a fibromyoma of the uterus came into view, and were so firmly fixed in the pelvis that it was impossible to raise them upward. The cysts were opened and their contents scraped out with the hands, which allowed somewhat more room in the pelvis. Dense fibrous bands extended in every direction, binding the tumor to the sacrum and to the rectum. After patiently tearing and cutting these, the tumor was raised out of the abdomen. At this time an obstinate and profuse hemorrhage occurred, which took place apparently from a branch of the mesenteric artery. The pedicle, very broad and dense, was transfixed with pins and a strong elastic ligature applied several times round it. The tumor was cut off, the abdomen irrigated thoroughly with hot water, the usual antiseptic dressings applied, and the patient put to bed, the operation having lasted one and one-half hours. The patient suffered severely from the shock, being over two hours under the anesthetic; the in-

testines had been, during this period, exposed, although constantly covered with hot flannels. In fact, there was scarcely a chance, apparently, for her recovery. At 6 P.M. she regained consciousness and complained only of severe backache. The pedicle was slow to separate, and only came away on the twenty-fourth day, and then with hemorrhage which nearly cost the patient's life. Fortunately, Dr. Helmuth, Jr., was in the room at the time when the bleeding occurred, and was able to seize the bleeding stump with a pair of long forceps, which was allowed to remain within the cavity for one week. The temperature scarcely rose to 101° at any time, and the patient made a perfect recovery.

CASE IV. *Subperitoneal Myo-fibroma (white); Myomectomy*.—Mrs. H., age 28 years, admitted May 18th, 1889. This patient, apparently a strong, healthy woman, has been married a number of years, has never had children, and has always suffered severely at the menstrual periods, which, however, were very irregular. Frequently at these periods, or shortly following them, she has had attacks of peritonitis, for which she has gone through the regular routine treatment.

Operation May 21st, 1889. Upon opening the abdomen the left ovary was found intact, but the right ovary was much compressed by two fibroids attached to the fundus of the uterus, one at its base and the other behind the broad ligament on the right side. These two tumors were removed, and the pedicles, being small, were allowed to drop back into the abdominal cavity. She had several attacks of vomiting during the first night, which were partially relieved by nux vom. and sub. nit. bismuth. The emesis was not, however, permanently removed until a seidlitz powder was given, which, although temporarily aggravating the condition, ultimately relieved her. From this time she steadily improved and left the hospital cured.

CASE V. *Interstitial Myo-fibroma (red) involving the entire Uterus; Supravaginal Hysterectomy*.—Mrs. D., age 43 years, admitted November 11th, 1889. Married, but has never had children, and has always enjoyed good health until the summer of 1888, when she noticed a small tumor within her abdomen which speedily continued to increase in size. The exhausting hemorrhages caused her much distress, and from loss of blood she became much prostrated.

Operation November 14th, 1889. Usual incision was made, when the tumor was exposed, rising well out of the abdominal cavity. Two Tait's screws were then inserted into the growth, whereby it was lifted out of the cavity. Wilcox pins were inserted and the elastic ligature applied

as usual. The stump was cauterized and dressed without the abdomen, the wound above and below having been approximated by deep silkworm and superficial catgut sutures. The usual dressing was applied. The patient made a steady recovery; the pedicle came away on the sixteenth day, and she was dismissed December 29th, 1889. Tumor weighed ten pounds.

CASE VI. *Interstitial, Subperitoneal Myo-fibroma of the Uterus (red); Supravaginal Hysterectomy.*—Mrs. Q., age 46, admitted November 23d, 1889. She is the mother of two children, and noticed the tumor (lying principally to the right of the median line) about six years ago. For two years following she was confined to her bed with repeated attacks of peritonitis, but during the last four years she has been in quite fair health, but delicate. The tumor has grown steadily and of late very rapidly, and causes much distress.

Operation November 30th, performed in the usual way. Pedicle came away on the fourteenth day. Patient's temperature only rose to $100\frac{1}{2}^{\circ}$, and to this height only on the second day, remaining between $98\frac{3}{4}^{\circ}$ and 99° at all other times. She left the hospital on January 14th, 1890. Tumor weighed nine pounds.

CASE VII. *Interstitial, Subperitoneal, and Submucous Fibro-myoma of the Uterus (white); Hysterectomy; Urinary Fistula.*—Mrs. McV., age 32 years, admitted January 7th, 1890. She is mother of three children, and has been always quite healthy; menstruated regularly, and in April, 1889, first noticed the tumor in the abdominal cavity, which has steadily grown in size. The loss of blood and consequent loss of strength led the patient to seek surgical interference. During her menstrual periods of late she has been obliged to keep very quiet in bed. Often has had to use from eight to fifteen napkins a day. On inspection the tumor protrudes the abdominal walls. In the hypogastrium a hard, apparently solid mass can be felt. Upon digital examination the os is found pointing upward and well down near the mouth of the vagina. On moving the tumor through the abdominal wall the uterus plainly moves with the tumor. Nodular, hard protrusions can also be felt through the vagina.

Operation January 8th, 1890, at 2 P.M. Usual incision made and Wilcox pins and elastic ligature used. Pedicle dressed without the abdominal cavity. Tumor weighs $3\frac{3}{4}$ pounds. Patient quiet during the first night; some nausea; vomited once; temperature $99\frac{1}{2}^{\circ}$ in afternoon. Catheter used every six hours. Diet, toast water. Second day the temperature was the highest, $101\frac{3}{8}^{\circ}$. Lowest temperature during first week $99\frac{1}{8}^{\circ}$, highest $101\frac{3}{8}^{\circ}$; average about 100° . Patient sleeps

some every day and night. Second week, highest temperature $100\frac{3}{5}^{\circ}$, lowest 99° . For last three days temperature 99° in morning and 100° at night. Natural movement of bowels. Urine escapes through the wound, but patient often passes it voluntarily. Wound dressed twice a day. Stitches removed on the tenth day. Third week, temperature ranged from 98° in morning to $99\frac{3}{5}^{\circ}$ in afternoon. Pedicle removed January 25th. Urine still escapes through the wound, but some through urethra. Bowels moved by cathartic and enema. Fourth week, temperature ranged between 98° and 99° . Urine still escapes through abdominal wall. Fifth week, urine still escaping through wound, but granulations are fast forming. Patient now on full diet. Left the hospital cured.

April 25th, 1890, patient attending to her usual duties. Occasionally a little moisture at the site of the fistula. She has gained greatly in health and strength.

CASE VIII. Degenerated Fibroid, accompanied by great Ascites; Supravaginal Hysterectomy.—Mrs. C., age 46 years, admitted February 10th, 1890. She is mother of a number of children, and began to feel uncomfortable in May of 1889, when the increasing size of her abdomen led to the diagnosis of fluid in the cavity, and in July she was "tapped" and about six gallons were removed. However, the fluid rapidly collected, and in December last she was again tapped, and at this time a tumor, slightly to the left of the median line, was detected, and as she for the third time began to be distressed by the accumulation, she decided to have the tumor removed.

Operation February 18th, 1890, at 2:30 p.m. The usual incision was made, and the fluid, being found to be ascitic, was drawn off. The tumor, involving the left cornu of the uterus, was ligated by "Tait's knot" and the pedicle dropped back into the abdominal cavity, the stump having been cauterized. During the third day the pulse grew gradually weak and it became necessary to stimulate her. However, on the following day she began to improve, and from this time gained her strength gradually. Left the hospital on March 24th, 1890. Tumor weighed five pounds.

CASE IX. Red Fibro-myoma, "locked"; Dense Adhesions; Supravaginal Hysterectomy.—Mrs. R. C., age 39 years, married. General health good till this tumor appeared. Began to menstruate at 14 years; was married at 23, and childless.

About ten or eleven years ago patient consulted a physician for dysmenorrhea, who told her she had a fibroid tumor about the size of a hen's egg. For three years she had no trouble from the growth, except weakness and difficult menstruation. About seven years ago she began to suffer from hemorrhages,

which became very severe and exhausting, occurring sometimes every week. These bleedings continued for two years and then gradually disappeared.

For the next five years, *i.e.*, until January, 1890, patient had no hemorrhages, but did have very profuse menstruation, losing a good deal of blood and being confined to her bed during the period. About a month ago she had three severe and prolonged hemorrhages within one week.

For the last two years patient has had incontinence of urine, markedly worse during the week after the menstrual period.

Supravaginal hysterectomy made March 26th. The tumor was so firmly fixed in the abdomen that a portion of it had to be enucleated to prevent tearing the intestines, which spread over the entire growth. The corkscrews tore out, and the fingers became paralyzed in the prolonged efforts to raise up the tumor, which was finally with great difficulty accomplished. The bleeding was great, and I was fearful the patient would never get off the table alive.

Elastic ligature applied beneath one of Wilcox's pins after removal by knife. Cautey used on the pedicle, which was short and large. Weight of tumor, five and three-quarter pounds.

Wound stitched with silkworm gut for deep sutures, cat-gut superficial.

Dressings changed on third day. Patient comfortable; temperature 101.2° in afternoon. On the fifth day feces began to escape through wound, which was dressed twice a day. April 17th pedicle came off.

April 19th patient sat up. Sleeps well. Can eat any kind of food. Temperature 99° . Is bright and cheerful; and although the fistula is still open, she gains daily and is sufficiently improved (April 29th) to warrant the record of successful hysterectomy.

CONGENITAL INGUINAL HERNIA OF UTERUS, LEFT TUBE
AND OVARY.¹

BY

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New York.

THE patient, a servant 15 years of age, visited the German Dispensary in October last, presenting a swelling in the left inguinal region which prevented her from working, and from which she desired relief. Was admitted to the gynecological division of the German Hospital October 31st and gave the following history:

No hereditary predisposition. Previous health good, excepting paleness which is said to have existed for years. Catamenia began at 16 and have appeared at irregular intervals of from six to eight weeks; quantity small and a duration of only a few hours.

She has had the swelling in the left inguinal region as long as she can remember, but has only been inconvenienced by it for the last few months. The patient is of medium height, quite stout and well built. The skin and mucous membranes appear decidedly anemic. On physical examination the lungs and heart are normal.

A swelling about five inches in diameter is seen in the left inguinal region, in which two hard, movable masses can be felt: the one is pear-shaped and large; the other, separated from the former, has the outline and size of a walnut. On digital examination in the narrow virgin vagina, the cervix is felt immediately behind the symphysis, and motion is imparted to it by pressure on the pear-shaped mass in the swelling. The larger mass can readily be returned from the hernial sac to the abdominal cavity, but its broad upper border can still be felt in the neck of the sac. The smaller, flat body is not reducible. On bimanual examination the pear-shaped mass is found to be the uterus beyond a doubt.

With the thumb of the left hand in the vagina, the left index finger in the rectum, and the right hand on the abdomen, it can be palpated on all sides and can readily be pushed up into the hernial sac. The smaller, flat body was called the ovary; and the tube, although not to be felt clearly, was probably

¹ Read before the New York Obstetrical Society, March 4th, 1890.

also present. With these conditions, a diagnosis of congenital left inguinal hernia, containing uterus, ovary, and probably tube, was made.

Owing to the large diameter of the neck of the hernial sac, and considering the recent rapidity of growth as well as the patient's occupation and the fact that she has not been able to work on its account, a truss did not seem advisable and operative interference was indicated.

A hysterorrhaphy might have been considered—opening the abdomen in the median line and attaching the uterus, with two or three subserous sutures on the level of the tubes, to the anterior abdominal wall—and the uterus by this means prevented from returning into the hernial sac. But a cure could not have been expected, as the neck of the sac would have remained open, and, unless closed by a subsequent operation, would probably have permitted the entrance of some of the other abdominal viscera. Excluding this measure, a radical operation was the only way in which a permanent cure could be effected; which view was also held by Dr. Willy Meyer, who kindly examined the case with me and assisted at the operation.

Operation was performed on November 5th, 1889, at the German Hospital. Ether anesthesia; stringent antiseptic details. McBurney's method was employed. A free incision was made, beginning a little to the outer side of the internal ring and running downward and inward over the entire swelling. The superficial and deep layers were dissected off and the hernial sac exposed. On opening the sac it was found impossible to tie it off at the internal ring without removing the ovary and tube. With the index finger in the hernial sac pressing the fundus uteri downward, a stout catgut ligature was placed around the sac and finger and slowly drawn tight on gradual withdrawal of finger. The sac, containing tube and ovary, was now detached, and the stump was dropped after being carefully disinfected. In the upper part of the wound the skin was sutured inward according to McBurney's method; the lower part was sutured together and drained. Canal was tamponed with iodoform gauze. Bandage. Duration of operation, three-quarters of an hour. Loss of blood, one teaspoonful.

The further course of the case was a very peculiar one. The wound remained an aseptic one and closed in a normal manner. Bowels moved on the third day *post* operation, and normal defecation followed daily. Abdomen at no time tympanitic. Patient gave no subjective symptoms, although temperature occasionally rose from normal to $103\frac{1}{2}^{\circ}$; the pulse remained at 80; tongue moist and not coated; no head symptoms; urine normal. Notwithstanding the administration of stimulants

(alcohol, caffeine, natrium-benzoate) and different preparations of iron, with nutritious diet, the anemic condition of the patient became more and more marked daily. The patient gave a malarial history, and although no enlarged spleen existed, she was given repeated doses of quinine with negative results.

The external wound being aseptic, the defecation normal, together with absence of tympanitic distention and pain, excluded the suspicion of an intraperitoneal process. I asked Dr. A. Jacobi, who kindly consented to examine the case; the result being that no organic change could be diagnosed physically to account for the rise of temperature. He also noticed the decidedly anemic condition.

Fifteenth day after operation—the temperature of the preceding day having been, in the afternoon 100° , in the evening 99° , with a pulse of 76—ten minutes after the nurse had left the patient in a good condition, she returned to find her in a deep swoon. All efforts to resuscitate her failed, and she died a few minutes later.

The most important changes revealed at the autopsy were the decided anemic tissues. The wound was found absolutely aseptic, with the sutured portion healed by primary union and the upper portion funnel-shaped and covered with healthy granulations. On opening the abdominal cavity the parietal and visceral peritoneum was found to be perfectly smooth and glistening. No layer of fibrin or adhesions near the inguinal canal or any place else, and no fluid in the peritoneal cavity. The pericardium contained one ounce of clear serum. The heart was large, especially its right half, and of flabby consistence, of a gray-brown color on section, with lighter-colored areas. The diameter of the larger vessels appeared abnormally small; unfortunately no measurements were taken. Brain anemic, otherwise normal.

There can be no doubt, after due consideration of the above history and autopsy report, that the patient died of cardiac weakness, due to degeneration of the heart muscle. The nature of this degeneration is not known; microscopic examination is pending. To what extent the long-standing anemia and the congenital smallness of the large vessels were concerned in the patient's condition can only be matter of conjecture.

It appears that the ether anesthesia had a deleterious effect on the heart; not so the operation, it being of such short duration and the loss of blood a minimum one.

The rise of temperature remains to be accounted for: the

term fever is purposely avoided, because, as mentioned above, the usual symptoms accompanying a rise of temperature—viz., pulse, respiration, urinary, cerebral, etc.—were wanting.

Excluding all absorption of pyogenic material from a normal healing process of the wound as well as of the peritoneum, we can only attribute the temperature to a so-called aseptic fever, or consider it due to the anemia. It is certain that elevations of temperature have been observed, in cases of anemia, not due to an inflammatory process, it being an open question in what manner the "heat centre" is influenced.

The foregoing facts necessitate caution in surgical intercession in cases of marked anemia, even when, as in this one, no abnormality of the circulatory apparatus can be demonstrated physically.

Further post-mortem examination shows the hernial sac to be the peritoneal covering of the left adnexa, and containing in one of its folds the left tube and ovary, so that a removal of the sac without the latter was impossible. The folds of the right broad ligament are exceedingly long and run behind the posterior surface of the uterus, so that the right tube and ovary lie on the left side of the womb.

This case is an exceedingly rare one, as can be seen by the following statistics: Englisch (in Stricker's *Medizinische Jahrbücher*, H. 3, page 335) has collected thirty-eight cases of hernia of the ovary, of which seventeen were congenital. Herniæ containing uterus with appendages are far more rare. Pitha and Billroth ("Handb. d. Chir.," Bd. iii., 3 Lfg., page 66) state that hernia of the uterus has been diagnosed only in pregnancy; also, that in the few cases of hernia of the non-pregnant uterus the organ was irreducible.

Having looked over the French, German, and English literature, it appears to me that no case like the one under consideration has as yet been described, with the non-pregnant uterus, tube, and ovary in a congenital hernia, where a reposition of the former was possible and the diagnosis of the condition made.

THE INJURIOUS INFLUENCE OF LOWERING TEMPERATURE AND NIGHT AIR UPON SLEEPING CHILDREN.¹

BY

GEORGE BYRD HARRISON, M.D.,

Washington, D. C.

I HAVE thought that no more practical or fertile subject could be offered for your consideration than the protection of infants and children, during the hours of sleep, from the depressing influence of progressively lowering temperature and the injurious effects of night air.

Judging from daily observations of prevalent methods and practices, the laity are grossly ignorant and uninstructed by us in regard to these matters of unquestionably genuine importance.

The instability of the nervous system of the infant, leading, as it does, to rapid and uncertain vaso-motor changes, added to the fact of a cutaneous superficies much more extensive in proportion to body weight than in the adult, and hence contributing to more complete evaporation from (and more sudden cooling-down of) the organism, would seem to be sufficient to give us a note of warning in this direction.

The following statements of Mr. Finlayson, based on 281 observations made upon 18 different children, of ages varying from 20 months to 10½ years, may, I think, be fairly accepted as reliable:

"1. The daily range of temperature is greater in the healthy child than that recorded in healthy adults, amounting to 2° F.

"2. There is invariably a fall of temperature in the evening, amounting to 1°, 2°, or 3° F.²

"3. This fall may take place before sleep begins.

"4. The greatest fall is usually between 7 and 9 p.m. (at least under the conditions of life in hospital).

¹ Read before the Washington Obstetrical and Gynecological Society, December 20th, 1889.

² Note the effect of this peculiarity upon the temperature curve of typhoid fever, and the indications to be derived from it as influencing the use of antipyretics.

"5. The minimum temperature is usually observed at or before 2 A.M.

"6. Between 2 and 4 A.M. the temperature usually begins to rise, such rise being independent of food being taken.

"7. The fluctuations between breakfast and tea time are usually trifling in amount.

"8. There seems to be no very definite relationship between the frequency of the pulse and respirations and the amount of temperature, the former being subject to many disturbing influences."

Some years since, during an endemic of diphtheria at the Washington City Orphan Asylum, the evils of "cold sleeping"—*i.e.*, of exposure of children during the hours of sleep to a progressively lower temperature than that in which the day had been passed—seemed to me to be very forcibly and painfully demonstrated.

The disease, in the terrible tracheal form, attacked the nursery, in which were some fifteen or twenty children ranging in age from 2 to 7 years.

Three promising little ones died in the institution; and so did another whose mother, seeing that it was not well, insisted upon removing it to her home.

I tried very earnestly to find some reason why this form of the disease had occurred in this particular ward; for the endemic had proved comparatively manageable in the older wards, its local manifestations in these being confined to the fauces and nostrils.

The only explanation (but one that seemed to me to be sufficient, and to which I was finally led) was this :

The playroom opened into the larger and longer dormitory. Both were heated by steam. The apparatus in the playroom was in perfect order, but that in the dormitory had given out, and the nurses relied upon leaving the doors into the warm playroom open to supply the heat needed for the sleepers. All the children in this ward were at once transferred into two small rooms on the opposite side of the hallway—rooms entirely too small for the accommodation of so many, but well ventilated and well heated—and not another case of croup or diphtheria occurred in this part of the house, although the endemic continued to progress in other wards.

While, as a matter of course, such an experience as this is not conclusive, it will at least be admitted in the way of corroborative evidence.

The practice of admitting night air into sleeping rooms, by way of improving ventilation, has been made too common by the imperfect construction of our houses. It is under any circumstances a bad and slovenly makeshift. Not only is progressive lowering of temperature insured by this means, but the foul air of the night, especially in a city, is in itself, and must of necessity be, a prolific source of injury to the sleeper. It is a matter of common observation in malarial districts that immunity from that poison may be to a large extent secured by shutting the windows at sunset and creating a draught in the chimney by means of a slight fire.

A few years since, my attention was attracted by an article copied into the *Braithwaite Epitome* from the *Medical and Surgical Reporter*, penned by an irregular practitioner of our city, but replete with good sense according to my own view of the matter.

I believe the only dogma of our school of medicine is to avail of useful observations and effective methods, from whatever source they may be derived; so I shall offer no further apology for liberally quoting from this paragraph.

Its author remarks at the outset: "If to sleep in the night air were not injurious to the animal economy, the beast would not be instinctively led to avoid it, for when beasts sleep in the cold night air they always place their nostrils near their sides in order to breathe the air tempered by the warmth of their bodies; and even birds, whose lives are spent in the air, usually sleep with their bills beneath their wings or hidden amongst the feathers of their breast."

Again he truly observes: "An individual is never known to suffer from sickness or disease caused by sleeping in a clean room from which the night air is excluded." Albeit, as he claims, the converse of the proposition is often noted.

Again later on: "It is not only the lowered temperature of the night air that is so seriously objectionable, but it is the breathing, while asleep, of the gaseous, poisonous properties which the night air always contains, in a more condensed and active form." . . . "Most beasts line their lairs with dead

grass, moss, or other substances; not to make them soft, but to make them warm. This instinctive act is directed by Nature in obedience to the physiological fact that, when the body is at rest and asleep, the organs do not perform their functions with the same activity that they do when the body is in motion."

"Hence the bodily temperature always sinks slightly during sleep; and if, while asleep, cold air is allowed to come in contact with the body and the lungs, the result is that heat is carried off more rapidly from the sleeping person than is commensurate with health, and has the effect of diminishing the resistance of the system to those morbid influences so characteristic of night air."

In those cases in which we find ourselves obliged, however, by the imperfect ventilation of sleeping apartments, to admit the outside air, a very simple and practical device for "robbing it of its sting" has been suggested incidentally by Dr. J. F. Bransford, of the U. S. Navy.

He was led to its adoption by certain experiences in Central America, and made it a subject of official report during one of the recent Nicaraguan expeditions.

After very careful experiment and the comparison of the results of several expeditions into the interior, during which various methods of protecting the officers and men from miasmata were tried, he reached the conclusion that sleeping within mosquito bars secured by far the most complete immunity.

By this means the men were protected from currents of air; the atmosphere was, to a degree, sifted of germs before it was admitted to the respiratory organs; and, lastly, he found by actual experiment that the temperature within the bars was one or two degrees higher than that of the tent outside of them.

In deference to our ex-president, Dr. A. F. A. King, we must also note the elimination of the mosquito—an insect proven by him and others to be *pestiferous* in the truest etymological sense.

The protection of the persons of children from draughts of air and actual exposure during sleep is of course not intended to be discussed in this paper.

Notwithstanding that the "calmness of children's repose" has

become proverbial in prose and poetry, and that the medical books establish it as a *sine qua non* amongst the indications of health, I take it that, in the experience of most of us, children are wont to emulate "old Mrs. Jackson, poor old soul," in habitually "kicking the kiver off." Certainly it has been my observation of them, whether grave or gay, sick or well.

Night drawers or sleeping bags are essential in most cases, and almost all mothers have come to recognize the fact.

There is one common custom, however, which, while tending to moderate the temperature of the bedroom, leads to serious vitiation of the air—viz., turning the gas low without actually extinguishing it. A year ago, in Baltimore, an adult relative of my own seemed, by quite conclusive proofs, to have wrecked her health for a time, if not to have endangered her life, by sleeping under these conditions in a small room without sufficient ventilation.

PROLAPSE OF THE FEMALE URETHRA,
AND
TRUE CYSTOCELE OR VESICO-VAGINAL HERNIA.

BY

PAUL F. MUNDÉ, M.D.,

Professor of Gynecology at the New York Polyclinic; Gynecologist to Mount Sinai Hospital.

(With two chromo-lithographic figures.)

My attention has recently been directed to the first of these rare diseases by two cases which came under my care at Mount Sinai Hospital, one in an old woman of 75, the other in a child 9 years of age. The disease is interesting, not alone from its rarity, but also through its resemblance, on mere ocular examination, to a malignant tumor, to which its usually dark-red and mottled color and great vascularity strongly liken it. It might also easily be taken for a large urethral caruncle; but the correct diagnosis is readily made by searching for the meatus

urinarius with a sound, which will be found to enter a slit near the centre, or slightly to one side of the centre, of the mass, and slip readily into the bladder.

I remember having seen several cases in past years where urethral caruncles were associated with a slight degree of prolapse of the urethral mucous membrane, which was excised with the caruncle; notably that of a girl of 20, whose ulcerated meatus urinarius could not be permanently healed until a vesico-vaginal fistula was made and the irritating urine thus diverted from the meatus. But none of the cases presented so distinct a tumor as the two which I will now briefly relate.

CASE I.—F. H., 75 years of age, entered my service on March 19th for frequent and painful urination caused by a tumor at the meatus, which had existed for several years, exactly how long could not be ascertained, but the patient claimed to have had pain during micturition for ten years. The intensely red tumor was the size of a large hazelnut, very sensitive, and bled freely on handling. A sound passed through a depression in its centre entered the bladder and revealed the nature of the mass. Under chloroform I seized the protrusion with a tenaculum, drew it out, and with scissors trimmed it off close to the edge of the meatus. The edge of the urethral mucous membrane was then stitched to the vestibular mucosa by a running suture of fine catgut. Union by first intention took place, the patient passing urine herself, and being discharged well in about a week.

CASE II.—L. D., 9 years of age; painful urination only three weeks; tumor at vulva only since three days. Sent to my service on April 16th by Dr. Henry Koplik, of this city.¹ Tumor rather larger than in first case (see plate, drawn from life by Dr. H. Macdonald). Operation as in first case; spontaneous urination; discharged cured on tenth day.

The history in both these cases gives no particular explanation of the cause of the prolapse and inversion of the urethral mucous membrane. A severe strain after a relaxing and irritating catarrh of the urethra or bladder might logically be supposed to be capable of bringing on a sudden prolapse of the urethral mucosa. But my two cases made no such report.

The method of treatment in these two cases is contrary to that practised by Dr. Emmet, who denounces the removal of the prolapsed mucous membrane as likely to be followed by

¹ To whom I am indebted for the literature of the disease.

contraction of the meatus, and advises that a buttonhole be made in the urethra at about its middle, and the prolapsed mucosa be drawn back and out through the incision, and there stitched to the edges of the wound, the superfluous tissue being removed. This is, no doubt, a very ingenious and logical procedure; but if the prolapsed mucosa is so hypertrophied and congested as in my cases, I question whether it will be possible so to draw it back or whether it will resume its normal condition. By uniting the edge of the urethral mucosa to the edge of the vaginal mucosa at the meatus, the danger of contraction is avoided.

The literature on this subject is certainly not extensive. Patrone (*Schmidt's Jahrbücher*, vol. 100, page 222) was the first to describe this affection. He collated the cases then described, and also placed two of his own cases on record. According to this author, Textor records a case occurring in a girl æt. 11 years, where the prolapse formed a tumor of large size, cylindrical in shape, projecting four finger breadths above the level of the vulva. Burns also records a case in a girl aged 11 years, in whom the prolapsus, of large size, formed a bluish, easily bleeding, sensitive tumor. One of Patrone's own cases occurred in a girl aged 10 years, another in a woman 28 years old. Since Patrone's article we find but scant mention of the disease in the literature. Seanzoni mentions the phenomenon in his writings, but remarks that it most commonly follows childbirth or injury.

Hudson (*Brit. Med. Jour.*, 1881, page 966) records a prolapsus urethræ in a woman æt. 30 years, but in this case the urethra was dilated to such an extent that the fingers could be introduced into the bladder.

Day (*Phil. Med. News*, 1884) makes record of two cases, one in a colored child aged *fifteen months*, where the prolapsus formed a tumor the size of a nickel, compressed between the labia, and which had existed for three or four months, steadily increasing in size.

The disease further receives but scant notice in Skene's late work upon gynecology, whereas in Mann's "Encyclopedia" a chapter is devoted by Baker, of Boston, to a description of the disease. Baker follows quite closely the footsteps of Winckel (*Deutsche Chirurgie*) and Emmet (*Amer. Gynec.*



PROLAPSE OF THE URETHRA.



TRUE CYSTOCELE.

Transactions, Address), the latter (as already stated) having recommended his own operation (buttonhole) for the malady. Winckel has only met one case of prolapsus urethræ in his experience, and proposes the appellation of inversion with prolapsus. In Winckel's article (to which I refer those who desire more minute description) we are told that Morgagni one hundred years ago discovered this condition of the urethra at two post-mortems. Etiologically it is interesting to note that calculus, injury, childbirth, cystitis, have been recorded as causative, but in young girls the etiology is certainly obscure. It is found mostly in chlorotic children from 3 to 15 years of age and (Baker) suffering from a present cough or ascarides; in others no cause can be found for the prolapse.

TRUE CYSTOCELE OR VESICO-VAGINAL HERNIA.

By the term "cystocele" is meant a prolapse of the anterior vaginal wall together with the posterior wall of the bladder. The word "colpo-cystocele" would, therefore, more correctly indicate the exact anatomical condition. But the case which I shall here briefly describe, and of which I give a colored plate copied from a photograph from nature by the official photographer of the Polyclinic, is one of *true prolapse or hernia of the posterior wall of the bladder*, covered only by vaginal mucous membrane, through a fissure made by the longitudinal separation of the muscular fibres of the anterior vaginal wall.

This occurrence is undoubtedly very rare, for it is the first instance which has come to my notice in a gynecological experience of nearly twenty-five years. Emmet, so far as I have been able to discover, does not mention this *true* form of cystocele in his work on the "Principles and Practice of Gynecology," third ed., 1884, although he describes the same occurrence as taking place in the urethra, for which he has devised the so-called "buttonhole" operation.

Skene ("Dis. of Bladder and Urethra," 1878) and Winckel ("Krankheiten der Weiblichen Blase," 1877) make no mention of this peculiar condition when describing the common affection known as "cystocele."

Anatomically, the lesion may be compared to ventral hernia occurring as a result of diastasis of the recti muscles, the

protruding mass of intestines being merely covered by skin and peritoneum, as in true cystocele the vaginal mucous membrane and the posterior wall of the bladder constitute the prolapsed mass. It is thus really a hernia of the bladder through a rent made by the separated fibres of the anterior vaginal wall.

The diagnosis is easy, although at first sight an ordinary cystocele is naturally thought of. But the detection of the borders of the separated muscular fibres of the vagina when the prolapsed bladder is replaced at once reveals the true state of affairs. Besides, the unusually tense, glistening, almost translucent appearance of the protruding swelling raises a doubt in the mind of the examiner as to the existence of an ordinary cystocele. In this case I at first believed it to be a cyst of the anterior vaginal wall, judging precisely from the glistening, translucent appearance, until on handling the mass it suddenly slipped upward into the bladder and my fingers encountered the borders of the separated muscular fibres. Repeated examinations while the vesical hernia was forced down, and after I had replaced it, as well as the sound in the bladder, convinced me, without a shadow of a doubt, of the exact nature of the condition.

Its position between the neck of the bladder and the cervix uteri showed that it was not a urethrocele.

The symptoms are similar to those of ordinary cystocele, namely, frequent, painful, and at times difficult urination, the urine being liable to be more or less alkaline and decomposed, and chronic cystitis gradually ensuing. As I have seen only this one case, and other authors do not mention the lesion, of course I have no other experience to base my observations upon. The treatment, I should think, must be either palliative by means of pessaries, chiefly that of Gehrung, which I use invariably and almost always successfully in ordinary cystocele; or radical by operative narrowing of the anterior vaginal wall. In this condition, however, the operation should differ from that for ordinary cystocele, in that the stitches should be made to include the separated muscular fibres of the anterior vaginal wall, instead of merely drawing together the vaginal mucous membrane. Stoltz's circular denudation (see this JOURNAL, March, 1890) might be employed, the deep

muscular sutures being first inserted transversely (silkworm gut being used) and tied across the puckered wound left after the circular suture is drawn tight; or Emmet's or Sims' longitudinal denudations may be used, with deep muscular and superficial mucous sutures, and in this case are likely to prove more permanently successful than when the vaginal mucosa alone is drawn together. Of course all this advice is but theoretical, based on the analogy with the operation for ventral hernia, since my case never returned for treatment.

The case is briefly as follows:

L. C., 25 years, married eight years, four children—last born February 1st, 1890—came to my clinic at the New York Polyclinic on March 17th, 1890, complaining of frequent and painful micturition, chiefly during the day, much less at night. Except when she passes water, there is no pain. General health good. The vesical symptoms first presented themselves about two months before labor, which was prolonged to forty-eight hours (child small), but have increased greatly since.

Digital examination revealed the condition shown in the plate, made from a photograph taken on the spot. The protrusion of the bladder wall between the separated vaginal muscular fibres is plainly seen, and distinguishes the plate from that of an ordinary cystocele.

Every straining motion of the patient forced the bladder out, and digital reposition was painless. The rather prolonged examination evidently alarmed the patient, for she failed to return for treatment and has since been lost sight of.

I would say, in conclusion, that if I have misstated the three authors named as having failed to mention this particular lesion, I beg to forestall criticism to that effect by saying that omission to give them credit for any reference to this subject is based entirely on my failure to find in their works any mention of it. If I have accidentally overlooked such mention, I crave the authors' pardon.

VAGINAL HYSTERECTOMY FOR MALIGNANT DISEASE OF
THE UTERUS.¹

BY

FLORIAN KRUG, M.D..

New York.

I HOPE you will excuse me for bringing up a subject again to-night of which a good deal has been said in the last two meetings. But I would like to show you some carcinomatous uteri which I have removed per vaginam, and give you the record of seven vaginal hysterectomies which I have performed within the last twenty-one months, omitting three others done by laparotomy and by the laparo-vaginal method.

My experience is a limited one, and I give it for what it is worth, thinking that every little may help.

Dr. Coe in his excellent paper has given us very unfavorable statistics of vaginal hysterectomy done by himself and the late Dr. Hunter. These statistics, among the most unfavorable ever published, have been confronted with the very successful ones of Dr. Baker of Boston, and Dr. Byrne of Brooklyn. Those who raised their voices against hysterectomy for cancer were numerous. Being an attentive listener to the proceedings, I was struck with the impression that it was not quite fair to condemn the radical surgical treatment, and to draw conclusions in favor of the more conservative and palliative methods, by pitting the most unsuccessful statistics of one side against the very best of the other.

Vaginal hysterectomy has been called a very dangerous, a very difficult, and a very unreliable operation. Still we have well-authenticated reports from the other side which tell an entirely different story. To take up only one of the latest published, that of Leopold, in Dresden (*Archiv für Gynäkologie*), shows a mortality of 6 cases out of a total of 110 operations, with one series of 52 consecutive successful ones; 80 of them were for malignant disease, with a mortality of 4;

¹ Read before the New York Obstetrical Society, March 18th, 1890.

77.5 per cent of these are still living; 64.5 per cent were operated upon two or more years previous to the publication, and are still free from recurrence, while 17 have remained well from three to five and one-half years.

Reports from other European operators are equally good, if not better. Scrutinizing these, we can no longer call vaginal hysterectomy a very dangerous or a very unreliable operation.

A few words about its being a difficult one. I will admit that some may find it more difficult to perform vaginal hysterectomy than high amputation; but I have heard a good many operators express the reverse opinion. And my own experience is the same. Of course, in comparing the difficulties met with in high amputation, I mean high amputation in the real sense of the word, and not, for instance, the procedure described and illustrated in the March number of *THE AMERICAN JOURNAL OF OBSTETRICS*, which means nothing more than the removal by *écraseur* of a cauliflower growth and a small portion of the anterior lip.

May I be allowed to call attention to the fact that Dr. Coe showed us a specimen only the other night, where, inspired by conservative impulses, he attempted high amputation of the carcinomatous cervix, but had to extirpate the entire uterus because he met with hemorrhage, which, as he stated, could not be controlled by any other means. Which was the less difficult operation in that case?

It has been stated in this Society that not every woman afflicted with carcinoma of the womb could go to an expert to have vaginal hysterectomy performed, while the less experienced operator, by keeping in mind his anatomy, would have no trouble in performing high amputation. How would the less experienced operator have extricated himself from such a dilemma?

I therefore cannot concede that high amputation, done in the proper way, is, as a rule, a less difficult operation than vaginal hysterectomy.

One fact became clear to me through the interesting discussion which took place here two weeks ago, and that is the value of thoroughly charring suspicious tissue with the actual cautery; and I intend to make use of it hereafter. I

attribute to it most of the success that seems to have been accomplished by high amputation. I think, in all cases where recurrence has set in soon after vaginal hysterectomy has been performed, that islets of carcinoma have been left in paracervical tissue or in adjacent parts of the vagina. Now, in future I propose to apply the actual cautery freely after the removal of the uterus, and if proper precaution is taken in doing so I see no harm in it.

In concluding I may state that during the period in which I performed seven vaginal hysterectomies and three by the abdominal and combined method I refused to operate in at least twenty-five cases, considering them too far gone, the broad ligaments or other organs being involved. In none of these cases, however, could I see any benefit from high amputation.

In all cases where the disease was limited to the uterus, whether it originated in the body or cervix, I have operated promptly, and I shall continue to do so as long as my results warrant it, notwithstanding the arguments which have been brought against vaginal hysterectomy.

As much as I want to be identified with conservatism in gynecology, in every other respect I like to be seen in the front rank of aggressive surgery wherever malignant disease is concerned.

IN MEMORIAM.

WILLIAM HEATH BYFORD, A.M., M.D.

Died May 21st, 1890.

WILLIAM HEATH BYFORD was born March 20th, 1817, in the village of Eaton, Ohio, and was the son of Henry T. and Hannah Byford. The family is of English extraction and has been traced back to Suffolk. His father, a mechanic of limited means, to better his condition removed to the Falls of the Ohio River, now New Albany, whence in 1821 he changed his residence to Hindostan, Martin County, Ind.



WILLIAM HEATH BYFORD, A.M., M.D.

Here his father died suddenly, leaving a widow and three children. William, the eldest, in his ninth year was compelled to give up his studies, which he had pursued with signal success for three or four years in the neighboring country school, in order to help his mother in the support of the family. For the next four years he worked at whatever he could find to do, and his scant earnings often dropped into the lap of his widowed mother like blessings from above. At the end of that time his mother moved to Crawford County, Ill., and joined her father. After working for two years on his grandfather's farm, the condition of the family being somewhat improved, it was decided that the boy's wish to learn a trade should be gratified. Accordingly he set out on foot for the village of Palestine, several miles distant, and on reaching it presented himself at a blacksmith shop and asked the smith if he would undertake to teach him how to shoe horses and become a skilful worker in iron. The blacksmith declined to have anything to do with him, and the would-be apprentice continued his tramp from one shop to another with no better success, until he finally caught sight of a tailor's sign and concluded to try his luck with the clothesmaker. He had no particular fancy for this occupation, but he had come to town to make all necessary arrangements for learning a trade, and he was determined not to return home before the accomplishment of his purpose. The tailor, whom Dr. Byford always mentioned as "a kind-hearted Christian gentleman by the name of Davis," received the young man kindly, and when he started home that night it had been agreed that he should be received by the tailor's family as an apprentice, provided a certain Methodist minister in his neighborhood would recommend him as "a moral and industrious boy." The recommendation secured, he was soon installed as an apprentice, and held the position for two years, when Mr. Davis removed to Kentucky. During the ensuing four years he finished learning his trade in the employ of a tailor at Vincennes, Ind. The boy was now twenty years old.

While serving his apprenticeship he devoted all his spare time to study, and day after day he had, while working on a garment, concealed some old text book, bought or borrowed,

which contributed to his stock of knowledge. In this way he mastered the structure of his native tongue, acquired some knowledge of the Latin, Greek, and French languages, and studied with especial care physiology, chemistry, and natural history. About eighteen months before the expiration of his term of apprenticeship he determined to devote his life to the study of medicine, and subsequently placed himself under the professional guidance of Dr. Joseph Maddox, of Vincennes, Ind. Soon after the expiration of his term of apprenticeship he was examined, according to a custom then prevailing in Indiana, by three commissioners appointed for the purpose, who certified that they were satisfied with his acquirements, and authorized him to engage in the practice of medicine. At once he began the practice of his profession in Owensville, Gibson County, Ind., August 8th, 1838. In 1840 he removed to Mount Vernon, Ind., where he associated himself with Dr. Hezekiah Holland, whose daughter he afterwards married. He remained in Mount Vernon until 1850. During this period he attended lectures at the Ohio Medical College in Cincinnati, and in 1845 he applied for and received a regular graduation and an accredited diploma from the same institution. In 1847 he performed two Cesarean sections and wrote an excellent account of the operation. One of these cases survived the operation for some days, but ultimately perished from peritonitis, presumably due to an error in diet. "This was followed by contributions to the medical journals which attracted the attention of the medical community, and gave their author a respectable reputation for literary acquirements, intellectual penetration, and scientific knowledge."

In October, 1850, he was elected to the chair of Anatomy in Evansville Medical College, Indiana, and two years later he was transferred to the chair of Theory and Practice, which he held until the extinction of the college in 1854. During his professorship in Evansville he was one of the editors of a medical journal of merit. In May, 1857, he was elected vice-president of the American Medical Association, then assembled at Nashville, Tenn., and in the following autumn he was called to the chair of Obstetrics and Diseases of Women and Children in the Rush Medical College at Chicago, vacated by

Dr. John Evans, the talented physician and United States Senator from Colorado. This position he held for two years, when, together with several associates, he aided in the organization of the Chicago Medical College. In this institution he occupied the chair of Obstetrics and Diseases of Women and Children until 1879, when he was again called to Rush Medical College to fill the chair of Gynecology, specially created for his occupancy. In 1870 he became one of the founders of the Woman's Medical College of Chicago. He was made president of the Faculty and also of the Board of Trustees, and both of these positions he held up to the day of his death. He was prominently identified with the organization of the American Gynecological Society, being elected one of the first vice-presidents, and president in 1881.

Dr. Byford was married October 3d, 1840, to Mary Anne Holland, daughter of Dr. Hezekiah Holland, by whom he had four children. Dr. Henry T. Byford, the distinguished gynecologist, is one of these children. Mrs. Byford died in 1864. In 1873 he married Miss Lina W. Flersheim, of Buffalo, N. Y., who survives him. The only child of the second union died in infancy.

Dr. Byford won merited fame as a prolific writer and as an authority in gynecology. Beginning with his paper on Cæsarean section published in 1847, he has contributed much of permanent value to every phase of the subject. In 1864 he published his first book, entitled "Chronic Inflammation and Displacements of the Unimpregnated Uterus," which is also the first medical work attributable to a Chicago author; second edition, 1871. In 1866 appeared his "Practice of Medicine and Surgery applied to the Diseases and Accidents of Women," which is extensively used as a text book, and which passed through its fourth edition in 1888. "The Philosophy of Domestic Life" was published in 1869, followed in 1872 by his text book on "Obstetrics," which passed through a second edition the following year. During a term of years he was associated with Dr. N. S. Davis, Sr., in the editorial management of the *Chicago Medical Journal*. Later he became editor-in-chief of the *Chicago Medical Journal and Examiner*, the successor of the two journals known as the *Chicago Medical Journal* and the *Chicago Medical Examiner*, and pub-

lished under the auspices of the Chicago Medical Press Association. There are many measures in practice with which his name is intimately connected: for example, the use of ergot in fibroid tumors of the uterus; drainage per rectum of pelvic abscesses that have previously discharged into that viscus; abdominal section for ruptured extra-uterine pregnancy, proposed long before the days of Tait; the systematic use of the slippery-elm tent.

As a teacher, in the lecture room, at the bedside, or in debate, Dr. Byford's utterances were always characterized by simplicity, clearness, and pertinency. No wonder, then, that his clinic was always overcrowded with students and practitioners, and that his slightest word invariably received a degree of attention all the more flattering because involuntary.

But perhaps it was as a practitioner that he achieved the greatest measure of success. Wisdom and enormous experience created his vantage ground as a consultant. It will be remembered that for more than twenty-five years he was a general practitioner before he devoted himself exclusively to gynecology. Even then the circle of his specialty included other organs than the womb. Like Trousseau, he was very exact in keeping his appointments. Throughout his career he was a rigid adherent to the code of ethics, because he believed its precepts to be both reasonable and right.

It has long been customary to regard compensation in money as one criterion of success in the practice of medicine. Dr. Byford's professional income during the last twenty years of his life varied from \$25,000 to \$30,000 per annum, and he bequeathed to his family, along with the heritage of a spotless name, a handsome fortune, well invested.

He was not an extremist; he rode no hobbies. None the less his life had certain clearly defined and fondly cherished purposes. They were all nobly sustained. One of these was the advocacy of the medical education of women. In this cause he was the pioneer in the West. To it he gave freely of his time, of his influence, of his wealth. Another was the establishment in Chicago of the Woman's Hospital. To-day this institution, with one-third of its beds free, flourishes, a monument to his persistent effort.

He loved young men. Counsel, encouragement, recom-

mendation, money, all were freely given, as if he were the debtor. Back of all his skill of hand and wisdom of professional judgment there was a wonderfully large and generous heart.

He died May 21st at the age of seventy-three years. For the last three years he showed symptoms of heart disease, that culminated in a fatal attack of angina pectoris.

He continued in active practice and in full possession of all his faculties to the end. On the Saturday preceding his death he performed abdominal section for the removal of the appendages on account of fibroid tumor of the uterus, and on Tuesday, the day of his fatal illness, he attended to his usual professional duties. Among the people of the city of Chicago, of the State of Illinois, and, indeed, of the whole Northwest, the name of Byford has been a household word for more than a quarter of a century. By the members of his profession he was as universally beloved for personal qualities as he was esteemed for professional pre-eminence.

W. W. J.

TRANSACTIONS OF THE NEW YORK OBSTETRICAL SOCIETY.

Stated Meeting, March 4th, 1890.

WILLIAM M. POLK, M.D., *later* ROBERT A. MURRAY, M.D., *second Vice-President, in the Chair.*

REMOVAL OF ONE TUBE AND OVARY; THE OTHER ALLOWED TO REMAIN,
ALTHOUGH DISEASED; ALEXANDER'S OPERATION; MARRIAGE AND
PREGNANCY.

DR. W. M. POLK presented the patient. She had entered Bellevue Hospital in December, 1887, with a common history of recurrent attacks of pelvic peritonitis. The uterus was found retroverted, bound down in the pelvis, and there was a mass, the size, apparently, of a hen's egg, on the left side. There was induration on the right side. The diagnosis was that of double pyo-salpinx and oöphoritis, and retroversion and adhesion of the uterus. In January, 1888, the abdomen was opened, the adhesions broken up, the left ovary (enlarged to the size of a walnut) and tube removed. The

ovary was subsequently found to contain half a drachm of pus. The right ovary was about the size of a pigeon's egg, evidently congested, but showed no evidence of cystic degeneration; the tube was strongly adherent, twisted and thickened, but the fimbriated extremity was open. The condition of the appendages on this side was such as had been considered by all operators up to that time as justifying removal, and he believed that to-day most surgeons made a practice of taking them out. He concluded to allow them to remain, and in about six months the patient returned with the same symptoms that she had been suffering from before the operation. The uterus was then fairly movable and free, but retroverted, and he performed Alexander's operation.

The patient married in June last, and he now presented her to show that organs which even at present were considered to be in a condition to justify their removal, were yet able, if permitted to remain, to perform their physiological function. This patient was now pregnant, apparently at the fourth month. Dr. Grandin by request examined the patient and verified the diagnosis of pregnancy.

OCCLUDING SALPINGITIS EXCITED BY SUTURING THE ROUND LIGAMENTS FOR
RETROVERSION OF THE UTERUS; SPECIMEN OF OVARY FROM WHICH
A CYST HAD BEEN EXCISED.

DR. POLK related another case to illustrate an accident which might attend the usual method of performing hysterorrhaphy, or the suturing of the cornua of the uterus to the abdominal walls. The patient had retroflexion, could not wear a pessary, consequently he performed laparotomy. He found no adhesions, brought the uterus up into suitable position, then ligated the round ligaments in front of it, as he had occasionally done before; but unfortunately the sutures were inserted too close to the Fallopian tubes, and inflammation took place around them and occluded both tubes. The patient suffered so much pain that he opened the abdomen again and found the tubes in the condition just mentioned. He inferred that this accident must frequently occur where the uterus was fastened to the abdominal walls by sutures inserted near its cornua.

At the first operation on this patient he had found a cyst in one ovary, the ovary itself being somewhat enlarged. As had become his custom, he enucleated the cyst and closed the ovarian wound by suture. On removing the appendages at the second operation he found this ovary in good repair, and exhibited it to the Society. The patient had done well since the second operation.

DR. H. J. BOLDT recited a case bearing on the question of removing the tubes and ovaries because of adhesive inflammation. The patient had suffered excruciating and constant pain, and had a temperature of 102.5° F. She had been under the observation of several physicians a number of months. He opened the abdomen last Sunday, and found the tubes and ovaries bound down by a large mass of perimetritic adhesions, which he broke up, filled the abdomen with water, thoroughly cleansed it, and left the appendages. The patient had no pain subsequently, and the temperature fell to normal. He could cite like cases, showing that it was not justifiable to remove the tubes and ovaries simply because they were bound down by adhesions.

DR. A. P. DUDLEY thought the first case recited by Dr. Polk an impor

tant one as bearing on the question of the limitations of the operation for removal of the tubes and ovaries. So long as they were simply adherent, the tube remaining pervious, they should not be removed, for the woman could yet bear children. He related a case, that of a woman whose uterus was retroverted and adherent, both tubes and ovaries bound down, and so much pain at the menstrual period that she was compelled to remain abed. She had given birth to two children some years before, but had not again become pregnant. There was laceration of the cervix and perineum, which he repaired, and then tried to restore the uterus to normal position, but the patient could not wear a pessary. After a time he admitted her again to the hospital, did laparotomy, broke up the adhesions, found the tubes and ovaries of normal size, although the ovaries contained small cysts; and as the probe could be passed from the fimbriated extremity into the fundus of the uterus, the appendages were allowed to remain. To retain the uterus in position he made an elliptical denudation on the anterior surface of that organ down to near the bladder junction, then denuded a part of each round ligament, and fastened them by an over-and-over suture to the denuded surface on the uterus. Besides holding the uterus up and forward, it was thickened and strengthened at its weakest point. He did not believe occlusion of the uterine extremity was so likely to follow this operation. The patient had menstruated since the operation (performed eleven weeks ago) and had suffered no more pain; the uterus was in its improved position. The case went to confirm the propriety of the course pursued by Dr. Polk, not to remove the uterine appendages simply for adhesions and small cysts in the ovaries. Rather than deprive the patient of these important organs, he would take the risk of opening the abdomen a second time should her symptoms continue or be renewed.

DR. POLK said he had been moved to present the case of pregnancy because it completed a cycle which began with a suggestion made before the Society about three years ago, but which was received with much scepticism. He believed that now, however, a number of operators were disposed to at least look favorably upon a course which he had adopted in this case. The patient could answer in person any objection which might be offered to leaving tubes and ovaries, although inflamed, thickened, and adherent. She had been relieved of pain, and had been left in a condition to fulfil the duties of her sex. There was no question but what the impression was growing in the minds of the profession (and he was fully in sympathy with them) that we had been led, by our knowledge of comparative immunity from danger on entering the peritoneal cavity, too much in the direction of mutilation and not enough in the direction of conservatism. If by perfected art we had obtained largely freedom from danger, this advance should be put to better use than merely sending women forth minus their tubes and ovaries—organs which were not alone essential to maternity, but which were necessary for the patient's health and well-being in many respects. He regarded the functional activity of the sexual organs in woman of so great importance that he had come to follow the rule to do a great many things in order to spare the appendages if the woman were under 35 years of age. His anxiety in this direction diminished as the time for the natural menopause approached.

DR. FLORIAN KRUG presented a specimen of

CONGENITAL INGUINAL HERNIA OF UTERUS, TUBE, AND OVARY.¹

DR. H. C. COE read a paper entitled

THE LIMITS OF VAGINAL HYSTERECTOMY FOR CANCER OF THE UTERUS.²

DR. W. H. BAKER, of Boston, by request, opened the discussion. He said he had come to listen rather than to make remarks, but was quite willing to

¹ See original article, page 606.

² See original article, page 587.

give his experience. His interest in the subject began with his work in the Woman's Hospital of New York in 1873, when Dr. J. Marion Sims was giving special attention to cancer of the uterus. Perhaps that which first led him to believe it was possible to cure these cases was the fact that one of the patients in that institution had remained free from recurrence nine years after an operation by Dr. Sims. The method pursued by Dr. Sims at that time consisted in removing as much of the diseased tissue as it was possible to do with the knife and scissors, and then bringing the denuded surfaces together by suture; but it was found when this course was adopted the disease usually soon returned. During the same time Dr. Thomas was working with the galvano-cautery wire. He drew down the cervix, gradually tightened the galvano-cautery wire around it, and removed a cone-shaped section. He was getting very good results when his work was stopped by the exclusion of this class of cases from the institution. Soon after the speaker had settled in Boston he found abundant opportunity to carry on work in this direction.

First he found that the immediate closure of the wound, after the operation as practised by Dr. Sims, was a disadvantage; the disease returned too quickly. He was, therefore, led to combine the operations practised by Dr. Sims and Dr. Thomas, and a little later adopted certain features of Schroeder's operation for removal of the entire uterus. He was himself surprised at being able to get as good results as he had reported in 1882, namely, out of ten cases operated upon by high amputation, when the diagnosis had been confirmed by the microscope, six were alive after four years; after ten years five of them, or fifty per cent, were still alive and perfectly well. He had examined all of them within the past three or four months. He hoped to be able to give the results of his work since 1882 at the next meeting of the American Gynecological Society, but the difficulties of tracing them were very great. He believed, however, that the percentage of recoveries at the end of four years would be as high as in the former series, or fifty per cent. A shorter respite than four years was hardly worth considering in one's reports.

Dr. Baker then described his operation, which applied to cases of cancer of the cervix, and it was estimated that ninety-six per cent of all cases of cancer had their origin in the cervix. Recognizing the fact that the disease, when it began in the cervix, was likely to involve the whole of that part of the organ before extending up into the body, he held that it was important in treatment to carefully dissect out the cervix as soon as possible by the procedure known as high amputation. The first part of the operation consisted in dissecting out the supravaginal cervix up to or near the os internum; then, starting from that point, the operator removed a cone shaped piece from the body of the uterus. A specimen was presented which showed that all of the cervix and from half to two-thirds of the uterus could be removed by high amputation. The specimen was from a nullipara operated upon eighteen months ago, and who was apparently perfectly well to-day.

Regarding the limits of vaginal hysterectomy, he said he believed with Dr. Coe that the operation should be adopted only in those cases in which the disease began in the mucous membrane of the body of the uterus, and was likely to extend into the body proper. In those cases he believed vaginal hysterectomy alone offered the patient any hope. But then this class of cases was small. In the cases of vaginal hysterectomy which he had himself performed, four in all, three of the patients died from recurrence of the disease within eighteen months from the time of the operation. In the fourth case the patient had been operated upon only three weeks, for malignant adenoma developing from the mucous membrane. None of his patients had died from the operation itself, whether consisting of high amputation or hysterectomy.

Regarding the second step in high amputation, after removal of the cervix and as much as possible of the body, he regarded cauterization, which had been dwelt upon by Dr. Byrne, as very important. The cautery should be applied over the entire denuded surface, not only quickly and

lightly, but repeatedly, until the surface had been charred and was black and dry. He believed Dr. Byrne was right when he said that the effect of the heat upon the disease was more than superficial. He had reason to believe that we got very much better results on account of the heat striking deeply into the surrounding tissues. The cautery should be applied red hot.

Again, he believed it very important to follow the cases up a long time after the operation, seeing them every month for a year, or even a year and a half, and as soon as any suspicious spot made its appearance cut it out and apply the actual cautery again. After two or three such treatments he had succeeded in getting some of the best results shown in his recorded cases. It was possible during the operation to safely remove a portion of the posterior vaginal wall, if it were involved. He had even removed the whole of the upper portion of the vagina, and then stitched the remaining portion to the stump of the uterus. In one case, operated upon within a year, he had removed a portion of the anterior wall of the vagina and also a piece of the bladder in trying to get away all the diseased tissue. It was in the lateral extension of the disease that we met with greatest difficulty, but even here, with persistent effort, we might accomplish more than one would at first suppose.

DR. CUSHING, of San Francisco, said an interesting question was, Why should partial removal of an organ the seat of malignant disease result in cure in a greater proportion of cases than removal of the entire organ? Dr. Baker's explanation seemed to be the only one which was tenable—namely, that the application of some powerful caustic, such as zinc chloride, as recommended by the late Dr. Sims, or the actual cautery, etc., in some way altered the nutrition of the parts and effected a cure.

He was, perhaps, the second person in the United States to extirpate the cancerous uterus, Dr. Lane, of San Francisco, being the first, and he could say that the final results in his cases had not been very favorable. In all excepting two cases the disease had returned and the patients had died; but these two were too recent to be quoted. In three cases of removal of the cervix in the manner practised by Dr. Sims, the patients were still well, the operation having been performed three years ago. He believed that all of Dr. Lane's patients on whom vaginal hysterectomy had been performed had also died. Dr. Coe would correct him if he were mistaken in this view.

He was unable to explain why the German surgeons have been able to obtain such remarkably successful results, unless the patients went to them much earlier than they did to the surgeons in America. He did not believe there was so much difference between the German and the American patient to account for the difference in results.

He thought Dr. Baker's results from high amputation had been unprecedented—fifty per cent remaining cured after four years. He could not understand them, except on the supposition that they in some way were due to the use of the cautery.

DR. COE inferred from Dr. Lane's letter to him that two of his twelve cases operated upon by vaginal hysterectomy had remained cured.

DR. JOHN BYRNE said that on account of the lateness of the hour, and the fact that his views regarding hysterectomy for cancer of the uterus were already well known, his remarks would be brief. He thought the entire profession, but especially conservative gynecology, must feel indebted to Dr. Coe for his able and unbiassed presentation of a subject of far-reaching importance. He hoped and believed, moreover, that this excellent and timely paper would contribute largely toward rendering unpopular much of the reckless surgery, abdominal as well as pelvic, of the last few years.

There was, however, one point of divergence between the author of the paper and himself, and to which he could not help alluding. Dr. Coe would seem to concede to hysterectomy a somewhat wider field than he, Dr. B., was prepared to admit. From his own clinical study of uterine cancer, and in the light of statistics now of record, he could not favor dan-

gerous mutilation for a condition which he thought he had proved to be manageable by operative measures, not only free from dangerous consequences, but even more promising as regards recurrence.

Cancerous disease originating in and limited to the endometrium, being comparatively rare, of slow growth, and, as Dr. Coe has already correctly pointed out, usually unattended by alarming symptoms, is rarely diagnosed until too late even for hysterectomy; while, on the other hand, where the disease is found to be strictly cervical, his method of excision and very thorough cauterization in fifty-nine cases of this class, resulting in an average immunity from recurrence of *nearly eight years*, and probably more, would seem to him sufficient ground for withholding approval of uterine ablation.

In his paper read before the American Gynecological Society,¹ he had stated distinctly that, no matter by what means the diseased tissues were removed, whether by the scalpel, cautery, scissors, or other instrument, the surface must afterward be deeply cauterized and charred; that in this cauterization of the tissues lay the explanation of the success obtained in his cases. He felt perfectly sure that neither high nor any other form of amputation would give satisfactory results unless the stump or exposed surfaces were afterward thoroughly charred.

Dr. H. J. BOLDT could explain the difference between the results of American and foreign operators only on the supposition already offered, that abroad the patients came under observation earlier. To illustrate this point, he said that over a year ago he was asked to assist at a vaginal hysterectomy for cancer, and on being requested to make an examination (the patient being already under ether), he expressed the positive opinion that the disease had advanced too far to justify such a procedure; that there would be recurrence within a very short time. He believed that in this country it was frequently the case that patients were operated upon after the disease had extended too far to justify it. It might be that in suitable cases high amputation, brought into vogue by Dr. Baker, was just as favorable, and perhaps more favorable than the radical operation. Personally he had not had sufficient experience with high amputation to speak with any positiveness on this point, but there seemed to be no question, judging from what had been said to-night and from what he had read, that this procedure was to be preferred at the beginning of the case when the disease started in the cervix. Regarding the difficulties of the two operations, he said high amputation should not be undertaken by the entirely inexperienced, for it, too, was difficult to perform.

His own experience with total extirpation of the cancerous uterus per vaginam had been limited to thirteen cases. Seven had been operated upon more than two years ago; in two there had been positive recurrence, probable recurrence in another, and one death. The others, six, had been operated upon inside of two years, and in one there had been recurrence. He believed that, in the great majority of cases in which recurrence was to take place, it would be noticeable within a year.

He believed there was a field for vaginal hysterectomy, but the cases must be selected. We could speak with more confidence regarding high amputation after statistics from various operators had appeared.

Dr. W. M. POLK said that, in common with the previous speakers and the entire Society, he wished to express his thanks to Dr. Coe for his paper, and for the admirable spirit which pervaded it. Undoubtedly all were a little at sea with regard to the treatment of these cases. There were two directions from which the subject could be approached, one from the clinical and the other from the anatomical side. The arbiter must be clinical experience, and in this direction Dr. Coe had made a bad showing for hysterectomy in this country. But its results here were not to be compared with those obtained in Germany. In discussing the subject from the statistical point of view, it was only fair to compare the best results obtained by the best operators in hysterectomy with the best results of the most suc-

¹ Gynecological Transactions, vol. xiv.

cessful operators by high amputation. Considered in this way, the results were about equally good on both sides. He was satisfied that many of the cases operated upon by vaginal hysterectomy in our own country should not have been operated upon, and that the pioneers of the method would probably have rejected them. It should not be resorted to where the disease had gone beyond the reach of the knife or scissors. Where it had passed that line, high amputation was undoubtedly to be preferred. But cases were constantly arising in which it was impossible for even the most careful diagnostician to determine on which side the line they lay.

There was one class of cases in which, although the disease started in the cervix, he would employ hysterectomy—namely, those in which it showed a tendency to travel upward along the mucous membrane of the cervix and body. While it was possible to remove it all with the cone-shaped piece in high amputation, yet one must ever be in doubt. He would consider the operative treatment of these cases as at least open to future consideration.

The anatomical question was a very important one. All knew that there were cases in which the peritoneum was so closely adherent to the posterior wall of the cervix below the line of the internal os that it would be impossible to take out all the cervix without entering the peritoneal cavity. The most difficult part of vaginal hysterectomy was the separation of the cervix and the ligation of the uterine artery, all of which was demanded in high amputation; and the question might be therefore asked whether it was not as well, after having entered the peritoneal cavity in the class of cases referred to, to go on and remove the entire uterus. The ligation of the broad ligaments above and of the ovarian arteries was comparatively easy. He was aware that there were some cases in which the peritoneum was not so closely attached to the cervix as would preclude excision of the entire neck without entering the cavity, but he believed such cases were in the minority. To leave this portion of the cervix would no doubt be equivalent to leaving a portion of the disease, which was not done in vaginal hysterectomy.

A practical point was the fact that in young subjects the disease spread very rapidly, and it was much more difficult to say in a case under forty years of age that the surrounding tissue had not become infected.

He had been favorably impressed with the action of the clamps in destroying diseased tissue beyond the point which it was possible to reach with the knife. The tissue included in their grasp sloughed away, and the destructive action extended somewhat beyond; but the question was whether this action was at all commensurate with that of the cautery. He professed faith in the action of the cautery, and believed that its influence reached more deeply than that of the clamps.

He could report sixteen vaginal hysterectomies, with four deaths. He attributed death in the four cases to some neglect of his own. In the first, it being the first case he ever operated upon in this manner, he claimed not to have been strictly clean, and the woman died of septicemia. In one, the patient died of hemorrhage; he was not quick enough in applying the ligature. In the third, death took place from intestinal obstruction in a loop which came down as he withdrew the gauze packing, and which might have been prevented by guarding it with the finger as the gauze was withdrawn. Death in the fourth case was to be attributed to the use of an imperfect clamp.

He thought that Dr. Coc's influence with the profession, and the admirable statistics shown by Dr. Baker and Dr. Byrne, might have undue weight in our judgment of the comparative value of high amputation and vaginal hysterectomy, especially if we looked at the results of the latter operation obtained in this country instead of in the old countries where patients reached the surgeon at an earlier period.

Dr. H. T. Hanks said that in the early part of his professional career in New York he had the pleasure of witnessing Dr. J. Marion Sims operate in some cases of cancer of the cervix uteri, and had afterward become so accustomed to high amputation by the scissors, knife, and cautery that he had seldom resorted to vaginal hysterectomy. He could say without hesitation

that his results with the former method had been very satisfactory, although his statistics were not at hand to support the statement. He had seen a good many cases of cancer of the uterus operated upon by vaginal hysterectomy in the city, and saw constantly many cases at the clinics, yet during five years only one patient had come under his own care in which he thought the Baker, the Byrne, or the modified Sims operation would not accomplish all that could be done by hysterectomy. The single case referred to was in a patient who rejected hysterectomy. Altogether he had performed vaginal hysterectomy only two or three times.

DR. JOHN BYRNE understood Dr. Polk to refer to cases in which the disease travelled rapidly along the mucous membrane, and involved not only the cervix but also the entire endometrium, and that here hysterectomy was indicated. Dr. Byrne held that in such cases neither amputation, as ordinarily performed, nor hysterectomy would prove of benefit. The cases which had been mentioned during the discussion as excluding hysterectomy constituted the large majority of those encountered in hospitals and at clinics. Take cases, for example, in which it was quite impossible, even by the most careful dissection, to remove all the disease, especially from the posterior portion of the cervix, without entering the peritoneal cavity. In such cases the softer material could be removed by the curette, the surface of the cavity dried and passed over a number of times with the cautery, and the patient be given a respite, perhaps of years. He had treated many patients in this deplorable condition, and in quite a number no return of the disease had appeared for three, four, five, and even six years. He had quite recently operated on a delicate, feeble little woman, whose uterus, after the curetting had been completed, was a mere shell; yet he thoroughly charred the inside surface, and twenty-four hours after the operation her condition was as comfortable as if no operation had been performed. There was no pain, no elevation of the temperature, and no constitutional disturbance whatever. He could also call to mind another case in which the uterus was in a like condition and similarly treated, the patient being a stout, flabby woman. Copious fecal discharges commenced to pass through the fundus uteri five days after the operation, and continued for six weeks, the fistula then closing. This patient made a rapid recovery, and remained perfectly comfortable until her death from broncho-pneumonia eleven months later. He mentioned these cases to show with what impunity the cautery could be used in apparently hopeless conditions. These cases were so numerous, compared with those of a more hopeful character, that he trusted the profession would soon come to realize the fact that very much could be done for their relief. At present, as a rule, absolutely nothing was done for these unfortunate sufferers, save now and then to scoop out some soft material and apply chloride of zinc, carbolic acid, or other astringent antiseptic whose only benefit consisted in checking the discharges for a little while, the growth, however, springing up again like a mushroom.

DR. POLK thought Dr. Byrne had misunderstood the class of cases to which he had referred. He did not mean those cases of cervical and endometrial carcinoma in which the deeper structures of the organ had become affected. He had in mind cases in which the mucous membrane became involved quickly, and the patient was seen before the deeper structures were involved.

Again, if the cautery would destroy the cancerous disease on the posterior wall opposite Douglas' pouch, the knife would do the same. By neither method could one go beyond the peritoneum.

DR. BYRNE remarked that the point which he made was that though it was impracticable to cut out all the diseased tissue, it was safe and not impracticable to burn it out, even at the expense of going through the cul-de-sac.

DR. POLK held that it could be cut out if it could be burnt out.

DR. GEORGE M. TUTTLE said his experience was a very modest one in this line. He believed that he appreciated the value of the paper fully, for a paper which arrested attention, directing it in the lines of conservatism, always had a distinct value. This was true, even though the listener differed from the conclusions drawn, as he did in the present instance. All must

be governed to a considerable extent by personal experience. The necessity for extirpating carcinoma of the breast was no longer disputed, yet he had heard it positively stated that in the service of one of the most skilful surgeons of this city in a large hospital they had not been able to trace a single case in which a complete cure had been effected for a number of years. There were plenty of men who did not believe in extirpating the glands of the axilla in every case of carcinoma of the breast. The propriety of doing this might be considered an open question among surgeons. Questions of this kind had been very fairly discussed in the book of Mr. Butlin, of London.

It seemed to him that two or three points made by some of the speakers were disputable. Conclusions drawn from a small number of cases, or cases in the hands of operators of limited experience, were not to be accepted unhesitatingly. He would dispute the propriety of selecting statistics which showed especially bad results. It had been his good fortune to witness operations for vaginal hysterectomy by some of the leading men in this special department in Europe; he had been present at the first operation performed by the surgeon who had been credited with the largest number of hysterectomies on record, and he was sure that at that time he lacked a great deal in the matter of technique. He thought there were none present who could not have done as well.

He had been impressed by the remarks of Dr. Cushing regarding the apparent fact that removal of a part of the cancerous uterus should give longer immunity than complete extirpation. As to the technique of hysterectomy, now that experience had established the different steps of the operation, he thought it was not so difficult as had been commonly supposed. Personally he had performed hysterectomy by the vagina only eight times, and high amputation only a few times in cases where extirpation was impractical. His cases had been too recent to lay much stress upon the results. The first was operated upon three years ago, the patient being yet alive, without recurrence. Two had died, both of recurrence, one within a period of four months (a case which had been rejected in Philadelphia). The other recurrence with a fatal result was in a patient who had a totally prolapsed carcinomatous uterus, the operation being one of the most difficult which he had ever performed.

He felt conservative with regard to hysterectomy, as he did with regard to laparotomy. He never operated upon a case when he had the slightest doubt of the limits of the disease, at least theoretically, for it was a disease of uncertain boundaries, and one could never be sure in practice that it did not involve tissues beyond those which he was about to extirpate. One case like that of Dr. Bull's, of this city, a healthy, rosy woman who had been operated upon by hysterectomy for unquestionable uterine cancer five years ago, gave one much hope in the treatment of these cases. If on careful examination, including palpation with the finger in the rectum, he felt that the disease was limited to the cervix or body of the uterus, he would be in favor of extirpation of the entire organ.

Dr. H. C. Coe closed the discussion. He agreed with Dr. Polk that the inexperienced with high amputation might find it a more difficult operation than hysterectomy, with which he was familiar. In one of his own cases the hemorrhage which arose when he started to do high amputation proved so great that he abandoned this procedure for total extirpation. But while he regarded the removal of the entire uterus as a simple procedure, yet it must not be forgotten that one laid open the peritoneal cavity, and when this was once opened the patient was liable to several accidents which he had already mentioned. The very fact that he had had two fatal cases of intestinal obstruction from adhesions at the site of the operation, was sufficient to make him hesitate somewhat before substituting a radical operation for a palliative one which it seemed would in these cases have removed all the disease.

It was to be remembered that his paper and the deductions which it contained were not based entirely upon his own experience, which had been small; he had studied the statistics of other operators as well, and the

course which he had laid out for himself was not to do vaginal hysterectomy except in cases of primary cancer of the corpus uteri. He did not wish to be understood as desiring to influence others to adopt this course, for the statistics which he had presented were not sufficient to be regarded as positive evidence against the operation, and each operator must judge for himself of the amount of importance to be attributed to them. As one of the gentlemen had said, several of the cases were open to doubt, and perhaps the next series of nineteen would give much more favorable results. What he had laid particular stress upon was the recurrence and not the immediate mortality from the operation. Certainly the list contained some cases which were as favorable for the operation as one could have selected. In one in which there was recurrence within six months, the disease was limited absolutely, as far as could be determined, within the vaginal portion of the endometrium. This case and two or three others had made him feel very much discouraged with the operation.

Stated Meeting, March 18th, 1890.

The President, J. E. JANVRIN, M.D., in the Chair.

Presentation of Specimens.

DR. PAUL F. MUNDÉ presented a number of specimens, the first four of which were of interest, not because of their rarity, but as illustrating the difficulty of diagnosis in some cases of abdominal and pelvic tumors.

I. MULTILOCLAR OVARIAN CYST MISTAKEN FOR ENLARGEMENT OF THE SPLEEN.

The first was from a lady who had been sent to him from Richmond, Va., about a month previously, complaining of a great deal of pain on account of an abdominal tumor. It had grown since it had first been noticed, six months before, to such a size that it reached from the left hypochondrium down into the right iliac fossa. It was hard, apparently, and movable. The upper border, on a line slightly below the umbilicus, had a peculiarly sharp feel, like the inner border of the hand. It felt so much like the border of the spleen, as he had observed it in several cases of splenic prolapse and enlargement, that he concluded, after careful examination, and considering its slow growth, its extension from the left hypochondrium into the right iliac fossa, and the fact that the usual splenic dulness was doubtful, and also the pain from which the patient suffered, that it was a case of enlarged spleen. The patient admitted that she had had malaria, leaving Louisville for Richmond on account of the climate. While examining the patient he lifted the tumor and felt that it had suddenly twisted on its pedicle. The patient afterward complained of severe pain, vomited before she reached home, and was confined to bed several days with a great deal of pain in the abdomen.

Having some doubt, he requested Dr. Thomas to examine the patient, which he did very carefully. To both of them the tumor felt like a conglomeration of vessels, and not as if it belonged to either the ovary or uterus. Dr. Thomas thought the tumor might contain some fluid. They reached the same diagnosis, and concluded that an exploratory incision was proper, although it was expected to find an enlarged spleen which would

have to be let alone. Two days after the examination acute peritonitis developed, which lasted two weeks, when she began to rally slowly and was taken to Mt. Sinai Hospital for an operation, Dr. Mundé's private hospital being full at the time. A microscopic examination of the blood gave negative results. Since the last examination the tumor had increased very considerably in size, and changed its relations, being felt in all directions in the abdomen. The abdomen was edematous, and he was not surprised to find that the patient had had general peritonitis with fresh adhesions. The tumor was found to be a multilocular ovarian cyst, which was adherent to the diaphragm, stomach, liver, omentum, and intestines by fresh adhesions, which were easily broken up and required only few ligatures. A drainage tube was introduced, and removed after thirty hours. There had been no elevation of temperature, and the patient made a good recovery, except that in the third week slight mental aberration occurred, due partly to her severe illness and to a mural abscess.

The interest in the case, as he already said, related to the difficulty of diagnosis, and he felt that hereafter he would prefer to open the abdomen at once whenever a tumor was present, rather than temporize and wait to learn what would come of it, in the meantime submitting the patient perhaps to risk from repeated examinations.

II. TUBERCULAR PERITONITIS MISTAKEN FOR DISEASE OF THE TUBES.

The second specimen was from a young married lady, mother of two children, who consulted him about a year ago for abdominal pains. Finding nothing abnormal on examination of the pelvic organs, he sent her back to her family physician, expressing the opinion that she had catarrh of the colon. She returned several months ago, when he found behind the uterus a loop, nearly as large as his index finger, feeling exactly like an enlarged tube. It was attached in Douglas' pouch, was immovable and excessively tender. There was not the least doubt in his mind but that it was the diseased right Fallopian tube. The left ovary and tube were also felt, apparently matted together. After leaving the patient at her own house a few weeks, hoping to reduce the acute inflammation, she was transferred to his private hospital, where, after two more weeks, laparotomy was performed. She was quite tympanitic at the time of the operation. He was astonished to see ascitic fluid gush forth from the wound and to find it a clear case of tubercular peritonitis. The right ovary was dotted with small tubercular nodules; the tube did not appear to be much diseased. Both were removed. The left tube and ovary, which he had supposed were matted together, were really normal, while the mass which he had mistaken for them was the sigmoid flexure and mesentery matted together by tubercular peritonitis. The peculiar loop which he had mistaken for the right tube was still present, and he was unable to say what it was, unless a vessel or lymphatic enlarged by tubercular disease. It was not disturbed.

The patient had recovered from the operation, which was performed two weeks ago. (She returned home and died of exhaustion and a relapse of the peritonitis, after reopening the abdomen for the escape of ascitic fluid ten days later.) It was the fourth case of tubercular peritonitis in which

he had operated. The other three patients also recovered from the operation, but subsequently died—two of a return of the local tubercular peritonitis, and one from extension of the disease to the lungs. He had very little hope from operative procedures in such cases, although, strange to say, there were many good results on record.

III. HEMATOMA OF BOTH OVARIES.

The third specimen was from a patient who had been treated by a prominent general practitioner for intestinal catarrh. She had been ill about two years, and had suffered much from recurring attacks of pelvic pain. On examination Dr. Mundé found the tubes and ovaries apparently small and adherent, the uterus not freely movable. Repeated local treatment by iodine and glycerin tampons, also galvanism, appeared only to increase the pain. So the lady entered his private hospital for operation. On opening the abdomen there proved to be a hematoma of both ovaries, the one the size of an orange, the other the size of an egg. Failure to diagnosticate these tumors previous to laparotomy was due to the fact that they were soft and could not be distinguished from coils of the intestine. The patient made a good recovery. This case is an example of the difficulty of diagnosis of obscure cases of ovario-tubal disease.

IV. PEDICULATED FIBROID TUMOR OF THE UTERUS.

The fourth specimen was from a young Southern lady whose family physician had sent her to his private hospital with the statement that she had a tumor which sometimes was at the umbilicus, sometimes in the pelvis, sometimes could be felt by the vagina, and sometimes was out of reach. Dr. Mundé found a very movable tumor, apparently not attached to the uterus at all. It was a question whether it was not a fibroid of the ovary. The tumor annoyed the patient because of its moving about, and she insisted on having it removed. It proved to be a fibroid of the size of a pint measure, attached to the left cornu of the uterus by a slender pedicle. He transfixed the pedicle, tied it off, seared the stump with the cautery, and dropped it. The patient made an uninterrupted recovery.

V. LARGE CYST OF THE BROAD LIGAMENT REMOVED INTACT.

The fifth specimen consisted of a cyst of the broad ligament which he had been able to remove entire, together with the ovary. This was the only time he had seen a cyst of the broad ligament removed intact. The other ovary was diseased and the tube occluded, and they were removed. The patient was doing well, it having been six days since the operation. (She made a rapid recovery.)

In reply to an interrogatory by Dr. Jacobus, he said the tumor was the size of the uterus at the seventh month of pregnancy.

VI. REMOVAL OF TUBES AND OVARIES; HYSTERORRHAPHY.

The sixth specimen consisted of the diseased tubes and ovaries removed from a patient who also had retroversion of the uterus with adhesions. The uterus was peeled from its adhesions to the rectum, thus enabling him to reach the tubes and ovaries, which were then tied off, and by means of

the ligatures of the pedicles the uterus was held up until he could pass a thick silk suture through the fundus and fasten it to the abdominal walls. A pessary in the vagina aided to retain the organ in position. The patient made a good recovery, but had a severe pneumonia, which was quite independent of the operation, and possibly was caused by the ether anesthesia.

Dr. Mundé also presented specimens from two typical cases of salpingo-oöphoritis, and one of dermoid cyst which showed that even small ovarian tumors might demand removal, for in this case it was only the size of a hen's egg, there was firm adhesion, and the patient had suffered a great deal of pain. Some other laparotomy specimens were shown, but the histories not given further than to say that all the patients recovered.

Dr. GRANDIN inquired whether there was any evidence of tuberculosis in the second patient previous to the operation.

Dr. MUNDÉ replied that there was none. The lungs were normal. The patient was very anemic, however, and the family physician and family stated that she had been suffering from abdominal pain for three years. When he saw her a year ago he did not suspect tubercular peritonitis.

Dr. GRANDIN asked whether, had there been evidence of tuberculosis of the lungs, Dr. Mundé would have felt himself justified in doing laparotomy in order to relieve abdominal pain.

Dr. MUNDÉ said he hardly felt competent to answer the question, for his experience had not extended that far. The patients upon whom he had operated did not show evidence of tuberculosis of the lungs or other organs. He believed, however, that he would have operated even if lung trouble had been found, for the operation would not have increased the pulmonary difficulty, while it would have been likely to relieve the abdominal pain to some extent.

Dr. H. J. BOLDT remarked that in his experience gynecological patients with tuberculosis were invariably anemic. As bearing on Dr. Grandin's question, he said that two or three years ago he removed the tubes and ovaries for salpingo-oöphoritis in a patient who at the time had pulmonary tuberculosis, and the operation had the desired result of relieving her of severe abdominal pain. There was the usual final result of the tubercular trouble.

Dr. H. C. COE said that F. Spaeth had collected sixty-four cases of peritoneal tuberculosis in which laparotomy was performed, and had divided them into four classes, viz.: First, those in which the genital organs were primarily affected, where early laparotomy was clearly indicated; second, those in which the pelvic organs were secondarily involved, where a favorable result could not be expected from the operation; when the disease originated in the intestine, as in the third class, the operation was simply palliative, but in primary tuberculosis of the peritoneum it was really followed by a cure. The existence of well-marked disease of the lungs would certainly, the speaker thought, render laparotomy merely a palliative measure, if, indeed, the patient survived it.

CARCINOMA OF THE OVARY; LAPAROTOMY.

Dr. H. J. BOLDT presented the specimen, which was removed from a woman 50 years old, who was first seen by him about three months ago. She said she had then been ill five months, suffering from pain in the region of the left ovary, the pain increasing in severity. He found a sensitive nodule behind the uterus, which on the left seemed to be connected with a tumor of indefinite size and surroundings. There was slight ascites;

the patient's general condition was poor, and he concluded that, from the history and physical examination, in all probability there was carcinoma of the ovary. He proposed exploratory operation, but the patient refused. She returned, however, last week, and at once submitted to an operation. Her condition was then worse and the ascites had increased. Cancer of the ovary was found, and the question arose whether to close the abdomen or give the patient some chance of relief from pain by removing the growth. He decided to remove it, but found the operation a most difficult one. The adhesions were very dense and extensive, particularly to the pelvic walls and intestine, and in breaking them up there was profuse hemorrhage. The case demonstrated the value of iodoform-gauze packing, introduced into the abdomen and vagina, in controlling hemorrhage. The pedicle was very large. The operation required less than an hour. The patient died from shock several hours later.

He presented a sample of catgut used by him in ligating pedicles, a material which he regarded as preferable to silk, because the latter, not being absorbed, occasionally caused fistulæ.

DR. CLEVELAND asked how the catgut was prepared.

DR. BOLDT replied that at present, after the boilings in alcohol as previously described by him, he immersed it simply in pure alcohol with the addition of one part to five thousand of corrosive sublimate.

DR. BACHE McE. EMMET thought the question whether to proceed with the operation in these cases of malignant disease of the ovaries an exceedingly important one, and one difficult to answer. In any case the final result would be fatal. But an operation which was likely to be long and difficult was apt under the circumstances to cause immediate death and reflect discredit upon surgery.

DR. R. A. MURRAY said he had assisted Dr. Boldt, and could testify to the difficulty of the operation, owing to the extensive adhesions and friability of the tissues. The patient had suffered from so severe pain that for this reason it was decided to proceed with the operation. About four quarts of fluid escaped when the peritoneal cavity was opened. There were nodules all over the peritoneum and intestine, and about six inches from the anus the rectum was almost occluded. The operation was performed very rapidly.

DR. COE said it had often been his experience with these cases that the diagnosis could be readily made after withdrawal of a quantity of the fluid by tapping, thus rendering subsequent incision unnecessary.

DR. MUNDÉ thought that if tapping were necessary to clear up the diagnosis, one might just as well make an exploratory incision and introduce three or four fingers, and thus put the question of diagnosis entirely beyond doubt.

DR. BOLDT said there was no error in diagnosis in this case, and no doubt about it; it had been made three months before the operation was performed. The only question was whether the tumor was removable. Having once put his hand into the friable mass, partly breaking it down, he thought it better to go on and remove it, since if it were left it would be likely to set up a fatal peritonitis.

DR. MUNDÉ thought an important objection to removal of the cancerous mass in these cases was danger of secondary hemorrhage. The ligature was likely to slip from the friable stump, even though one thought he had removed all the diseased mass. In fact, the only patient he ever lost from secondary hemorrhage was in a case of this kind. As in Dr. Boldt's case, the cancerous mass involving the ovary broke down while he was examining it, making removal necessary. An hour afterward, while he was performing a third laparotomy for that day, secondary hemorrhage occurred, and after rapidly completing the operation which he was engaged in doing

he reopened the abdomen of the cancer case and secured the bleeding point at the place where the ligature had slipped. Saline transfusion was resorted to, but the patient died within twenty-four hours. He would never again remove a cancerous mass unless positive he could have sound tissue for a stump.

SARCOMA CORPORIS UTERI; VAGINAL HYSTERECTOMY WITH FATAL TERMINATION.

DR. H. C. COE presented the specimen, which was removed from a patient of Dr. A. M. Jacobus', who furnished the following history of the case: Mrs. W., *æt.* 55, married thirty years; had one miscarriage, but no children. Menopause ten years ago, two years before which she had menorrhagia, which gave rise to the erroneous opinion that she had a fibroid tumor. Three years after the establishment of the climacteric she had a sudden profuse uterine hemorrhage, which continued for several hours and was accompanied by colicky pains and the passage of clots. During July and August, 1889, she had several similar hemorrhages at intervals of a week or two. She was first seen by Dr. Jacobus in October, 1888, when she complained of no uterine trouble; in August, 1889, she applied for examination. She was quite anemic and presented a cachectic appearance. On examination with the speculum a white, doughy material was seen protruding from the cervix; the uterine cavity was filled with similar material, which was all thoroughly removed with the curette, the endometrium being then swabbed out with a solution of the chloride of zinc, one to eight. The mass removed was odorless and looked like a softened fibroid; through accident, it was not examined microscopically. The patient's condition was much improved, and there was no more trouble until December, 1889, when she had a profuse hemorrhage, which recurred at short intervals until the end of January, when she consulted Dr. Jacobus again. The careful use of the curette showed the presence of numerous small granulations of the endometrium, the removal of which was followed by free hemorrhage. Although the patient had no pain or offensive watery discharge, he entertained the suspicion that malignant disease of the corpus uteri was present, either epithelioma or sarcoma, more probably the latter. The patient objected to a radical operation, but a week later she had another hemorrhage, and Dr. Coe was asked to see her in consultation. He found the uterus small, movable, and insensitive to the touch, while the os barely admitted a small-sized dull wire curette. He removed several pieces of soft, brain-like material, sections of which showed under the microscope the typical structure of round-celled sarcoma. By his advice the patient entered the New York Cancer Hospital for a radical operation. Her general condition on entrance was not good. There was a systolic murmur and the urine contained a trace of albumin with hyaline and finely granular casts, so that a somewhat doubtful prognosis was given.

Operation February 19th, 1890, under ether anesthesia, and with the strictest antiseptic precautions. The patient was away from the ward only fifty minutes, and the operation was not especially difficult, except that the working space was small, the patient being an old nullipara. The broad ligaments were secured with ligatures. The patient did well until the third day, when her temperature rose to 100.2° F., the pulse varying from 90 to 140; she was very restless and vomited several times, complaining of some pain

in the lower part of the abdomen. Calomel and seidlitz powder were given without result. Rochelle salts and a high enema finally caused a slight evacuation. Twenty-five ounces of urine were passed during the twenty-four hours, containing a trace of albumin, but no casts. On the fourth day the temperature was normal. The abdomen was flat and not sensitive on pressure. Skin hot and dry; eyes wild, with pupils dilated. The patient was very restless and complained of pain in the hypogastrium. The pulse became rapid and weak, and she became gradually comatose, dying seventy hours after the operation. The final symptoms were supposed to be of uremic origin, and the treatment was directed accordingly; but six ounces of urine were drawn just before death, containing no albumin and a normal amount of urea. The bowels could not be moved, though calomel and elaterium were given. At the autopsy it was found that the wound was perfectly healthy, but there was commencing diffuse peritonitis, but no adhesions. The heart was hypertrophied, and there was mitral insufficiency; the kidneys were the seat of chronic diffuse nephritis. In commenting upon the case, Dr. Coe called attention to the obscure character of the symptoms, from which it was impossible to infer the existence of peritonitis, since there was neither general tenderness, tympanites, nor elevation of temperature, while the known condition of the kidneys rendered it quite probable that there was a uremic element in the case. The patient being exceedingly nervous and hysterical, it was difficult to properly estimate her subjective symptoms. In short, the cause of death was unknown before the autopsy. As to the cause of the peritonitis, the speaker could hardly believe that it was of septic origin, because the operation had been conducted with great care, and, moreover, the wound presented a perfectly healthy appearance. In order to avoid intestinal obstruction, an attempt was made to move the bowels a few hours after the operation, but they did not respond to various laxatives and enemata until the third day, and then not satisfactorily. The pathologist suggested that the irritation of the mucous lining of the intestine may have had something to do with the inflammation of the serous coat.

DR. JACOBUS thought one thing which favored a fatal result was the anemia due to the repeated attacks of free hemorrhage which had occurred during the two months preceding the operation.

DR. BUCKMASTER inquired of Dr. Coe how he would explain the action of the laxatives in setting up peritonitis.

DR. COE said that he did not know, unless it was by causing very intense congestion of the mucous membranes. He was himself sceptical regarding this explanation. The patient had received various laxatives at different times, such as calomel, salts, and elaterium; she was also given several enemata before the bowels moved. She had little pain, and there was no tympanites whatever. It was one of those cases of peritonitis in which there was an absence of symptoms.

DR. BOLDR said that in cases in which he had desired the bowels should move quickly he had given a dose of sulphate of soda about half an hour before the administration of the anæsthetic. In pursuing this course he seldom failed to secure a movement within twelve hours after the operation.

DR. MUNDE expressed the opinion that in Dr. Coe's case the peritonitis developed before the laxatives had time to act, and for that reason they proved negative. In the few cases which he had seen in which different measures failed to cause the bowel to move, tympanites developed, went on increasing, and the patient died, apparently of shock or heart failure.

and the post-mortem showed peritonitis, although there had been no elevation of temperature.

DR. COE said there was no tympanites in his case; the abdomen was flat.

DR. CLEVELAND inquired whether the anesthetic might not have had something to do with causing death.

DR. COE said it might; but the patient passed twenty-four ounces of urine daily after the operation, and although before the operation it had contained traces of albumin and some casts, yet the last quantity examined subsequent to the operation contained no albumin, no casts, and contained the normal amount of urea. He treated her, however, as for uremia.

DR. A. P. DUDLEY inclined more to the belief that the cause of death in this case was sepsis with a low temperature, than to the belief that it was the result either of the laxative or anesthetic. He thought he had tested the value of salines after operations as thoroughly as most men, and had never known them to irritate the bowels. But he seldom mixed them with calomel. He had administered as many as six or seven seidlitz powders without causing a movement of the bowels, and, the temperature then running up and showing evidence of commencing peritonitis, he gave compound cathartic pills, but never calomel in powder, which acted as a depressant. If, after giving the compound cathartic pill, the bowels did not move within four to six hours, he proceeded to give a high enema compound of glycerin three ounces, sweet oil two ounces, and of turpentine one drachm. After this the bowels almost always acted quickly. But he did not believe the laxatives had anything to do with causing death in Dr. Coe's case, unless he gave large doses of calomel, which had a depressing effect. This drug acted badly when given with salines. It was too harsh, especially when there was commencing peritonitis.

SPECIMENS OF CARCINOMATOUS UTERI REMOVED PER VAGINAM.¹

DR. FLORIAN KRUG presented the specimens.

DR. H. C. COE wished to reply briefly to the reader, since the paper was really a continuation of the discussion of his own read at the last meeting of the Society. The doctor was to be congratulated on his immediate results. But it should be remembered that he (Dr. Coe) had not himself found fault with vaginal hysterectomy because of the difficulty of its performance. On the contrary, he had not found it particularly difficult, no more so than high amputation. The question which he had raised did not relate so much to the difficulty of the operation as to its immediate results, or to the condition of the patient at the end of eight or ten months; he had questioned its value as a *curative* measure in the treatment of cancer of the cervix uteri. The more frequently one performed the operation the more skilful he became, but it was always impossible to say positively whether one had removed *all* the disease or not. He wished to have it plainly understood that in his paper he did not dwell so much upon the technique of the operation as upon the *ultimate results*. It was true that some of the German statistics were remarkably good, but his object was to call attention to the results of the operation in this country. Although the statistics which he had reported were very bad, yet those of some other American operators which had been personally communicated to him were not as favorable as could be wished.

DR. MUNDÉ wished to say a few words on this subject, since he was one of the first in this country to write in favor of vaginal hysterectomy for cancer of the uterus, the paper being in reply to one by Dr. Reeves Jackson, of Chicago. About that time he performed two vaginal hysterectomies with a successful result. Since then he had performed five, with two deaths, caused, he thought, by faulty methods. But the patients who had recovered from the operation had all subsequently succumbed to a recurrence of the disease. The patient who lived longest died eighteen months

¹ See original article, page 630

after the operation. He would continue to do it, but did not happen to see cases in which it was applicable. He had just recently performed practically a high amputation of the cervix by the galvano-cautery for epithelioma in a girl aged 18, and went so far as to almost open the posterior cul-de-sac, a deep slough afterward coming away. Now, four months later, the patient was apparently cured. He was still undecided regarding the treatment of these cases. If he should see a case early, while the disease was limited to the body, he would not think of doing any other operation than vaginal hysterectomy, but he was in doubt whether high amputation would not give just as good results where the disease was in the cervix. He did not feel so formerly. He had fought boldly against Dr. Jackson's opinions, and thought then that he had obtained the advantage in the discussion, and his experience since had not really been sufficient to justify further statements. He certainly would remove the uterus entire when the disease appeared to be limited to the body.

DR. W. GILL WYLIE regretted not having been present to take part in the discussion on Dr. Coe's paper. During the past fourteen months he had performed vaginal hysterectomy fourteen times. He resorted to it frequently because he thought it the proper treatment in many cases which came under his observation. When the operation was first introduced he did not favor it, for he had been doing Sims', which consisted in taking away as much of the diseased tissue as possible without complete removal of the uterus, and following it up with the chloride of zinc. Not until last year did he have cases which seemed to justify hysterectomy, and then they came in unusual numbers—about one each month. If he were guided by his experience, a man who would refuse to take out a uterus the seat of cancer which had not spread to the surrounding tissues would, he thought, make a very serious mistake. He thought any gynecologist who could have seen his cases would not have hesitated about doing hysterectomy at all, for the simple reason that even in cases in which the disease seemed to have been just commencing in the cervix, it was found after extirpation to have also invaded the fundus. In other cases the pathologist was in doubt—could not say whether there was or was not cancer; yet on account of repeated hemorrhages the operation was performed, and subsequent gross and microscopical examinations left no doubt of the presence of cancer. There had been but one death following the operation, and this was due to acute Bright's disease developing on a chronic affection. There was no injury to the ureters, and the operation itself was one of the most satisfactory which he had ever performed, yet the patient died on the seventh day of suppression of the urine. The other patients, so far as he knew, were all living, and in only one was there any sign of return of the disease. In it fully a third of the uterus had been destroyed by cancer, and he first curetted the cervix, burned it, and then removed the entire organ. The patient was now going on her second year, and had good general health.

He did not think the operation at all difficult, and did not think we should lose more than one patient in ten, and perhaps, with experience, not more than one in twenty. In cases in which the uterus was too large to take out by the vagina, he would loosen all the vaginal attachments just as he would if he meant to complete vaginal hysterectomy, then open the abdomen and remove the organ from that direction. This combined operation was simple and satisfactory.

DR. BUCKMASTER said the gynecologists seemed to be adopting a policy exactly the reverse of that pursued by general surgeons. The latter, according to Butlin, an English surgeon who had had a large experience in this direction, were coming to remove only a part of the affected muscle, only so much of it as to be assured of removing all the malignant disease. For instance, in the case of malignant disease of the upper lip, where better results were obtained from excision than elsewhere in the body, only a part of the muscle was removed, and this is also true of the tongue. Many surgeons are removing only a portion of the breast when only a part of it is involved, instead of following the old surgical rule to take away the whole breast in any event. The speaker had seen some surgery of the breast for

malignant disease lately, and he was quite sure that the new rule in the cases which he had been able to follow proved quite as satisfactory as the old.

DR. MUNDÉ said he had been accustomed to remove rather more than less than the whole breast when it was the seat of malignant disease; for how were we to know when only a part was affected? He would like to protest against the new rule mentioned by Dr. Buckmaster.

DR. CLEVELAND said he had been strongly impressed by one remark made by Dr. Baker regarding high amputation at the former meeting, to the effect that he subsequently saw his patients every month or two, and a number of times he noticed what appeared to be a recurrence of the disease. When this was observed he always made use of the actual cautery again. Thus it would seem that the cautery was an important agent in high amputation, and without its use much less favorable results might have been recorded.

The speaker had seen a large number of cases of cancer of the uterus in the New York Cancer Hospital, but there were only a few suitable for operation. He had had but four cases of vaginal hysterectomy, although he had seen all those operated upon by Dr. Hunter and Dr. Coe. One of his own cases died upon the operating table, of exhaustion. In another he had to do the combined operation, loosen the uterus from the direction of the vagina, and, finding it too large to extract in that way, open the abdomen. The patient did well until the fourth day, when she died from the bursting of a mural abscess. The other two cases recovered from the operation, which had been done within a few weeks in one instance, and within two weeks in the last one. The former he had related at a recent meeting; in the latter recovery took place without a symptom, the temperature remaining normal throughout.

DR. HANKS asked Dr. Cleveland if it had not been stated that two out of three patients entering the Skin and Cancer Hospitals at London and New York were not suitable for vaginal hysterectomy.

DR. CLEVELAND thought the proportion of cases not suitable for the operation was greater.

DR. HANKS said that meant that the cases which were operated upon by vaginal hysterectomy were those in the best condition, and therefore ought to get well if the operation were a safe one.

DR. WYLIE administered arsenic constantly to his patients for a long time, and thought it exerted an important influence in preventing a return of the cancer.

DR. BOLDT thought one chief reason why the results of vaginal hysterectomy abroad were much more favorable than here was the fact that patients there went much earlier to those who were perfectly competent to operate, while here they were much more likely, if they sought advice at all, to go to some midwife. Out of fifteen operations, he had lost but one patient.

DR. MUNDÉ wished to say, in explanation of his apparent change of base, that he was not opposed to vaginal hysterectomy; on the contrary, he believed it the proper procedure wherever the disease was confined strictly to the body of the uterus. But he had seen only two such cases inside of about three years. One was in an old lady from whom he had removed an ovarian tumor one year before. She came back, and he found a cancer of the body of the uterus, and advised hysterectomy. She asked if she must go through such an operation as had been performed before, and said she was then past sixty and preferred to die as she was. The other case was in a young girl, and an operation was not permitted. He was in accord with Dr. Wylie and Dr. Cleveland, but he did not chance to see the cases soon enough.

DR. COE wished to emphasize the fact that, while much had been said about operating only when the diagnosis had been made very early, there were cases in which at an early stage it must be in great doubt, especially if the aid of the microscope had not been invoked. He had examined two uteri, removed by eminent surgeons in this city, in which there was no malignant disease at all, the condition being simple erosion of the cervix,

as shown by the microscopical examination. He had heard on good authority that this error was not unheard of on the Continent.

DR. BACHE EMMET thought also that a number of cases had been reported in this country as cases of carcinoma of the uterus in which the diagnosis had not been confirmed by subsequent microscopical examination of the specimen.

DR. KRUG said all his specimens had been examined by a microscopist; and Dr. Wylie made the same statement, and added that before the operation the pathologist was often unable to make a definite diagnosis from examination of the material removed by the curette. In two or three such cases he had gone on and removed the uterus in order to stop hemorrhage, and subsequent examination of it by the pathologist left no doubt of the malignant nature of the disease at all.

THE PRESIDENT, having been absent because of sickness when this subject was discussed at the last meeting, wished to say a few words on the present occasion. He had read Butlin's book, and was somewhat surprised at the ideas attributed to him by Dr. Buckmaster. Having read a paper on malignant disease of the breast before the Society two years ago, he had all the more reason to be informed regarding Butlin's views, and he felt quite positive that that gentleman urged strongly the propriety of removing the entire breast and also the axillary glands. This, too, had been the course which the speaker had adopted in a large number of cases, with most happy results.

With regard to high amputation and vaginal hysterectomy in cancer of the uterus, he had found the latter operation decidedly easier to perform. He had started out about six years ago to do Dr. Baker's operation, and applied it thoroughly a number of times, perhaps ten or twelve, but in all there had since been recurrence, requiring later the use of the cautery in order to stay the progress of the disease as much as possible. Regarding the cases seen at the Skin and Cancer Hospital, where he had charge of the gynecological department, he believed that fully nine out of ten cases which entered that institution had gone so far as to admit of no other operation than simple curetting, to be followed by the cautery. He had applied this treatment to so many cases that he had ceased to keep count of them. In several such cases the curette had gone through the diseased tissue into the peritoneal cavity, and a loop of intestine had descended. It was pushed back, retained, and gave no further trouble. All the tissues seemed so changed that there was little danger of peritonitis from such accidents. Of course due care was taken not to injure the gut with the cautery.

In two cases of vaginal hysterectomy, the last one operated upon this fall, after applying the clamps he separated the stump of the broad ligament with the Paquelin cautery. His object in doing this was not specially to destroy tissue beyond the reach of the forceps, but to prevent adhesion of the intestine to raw surfaces. The result was all that could be desired, and he had never seen intestinal obstruction following the operation (which had been described in two cases by Dr. Coe). He thought this a practice well worthy of adoption by other operators, if they would avoid the risk of intestinal adhesion and obstruction. Iodoform gauze was used in retaining the intestine above the raw surfaces of the cut vagina, which were of course at a point lower than the seared broad ligaments.

DR. BUCKMASTER repeated what he remembered as the views expressed in Dr. Butlin's book, to the effect that while the entire morbid growth should be removed, yet surgeons had often unnecessarily mutilated the patient by taking away a much greater amount of tissue than was demanded. He also expressed doubt with regard to the propriety of removal of the axillary glands when apparently not involved. Besides the lip as an illustration of an organ only partially removed for malignant disease, he also mentioned the tongue. Of course the remaining portion of these organs was useful, which might not be the case with the uterus; yet certain reasons for not removing the former might also apply to the latter.

THE PRESIDENT thought removal of a portion of the lip or of the tongue was hardly analogous to removal of only a portion of a glandular structure,

like the breast, which was the seat of malignant disease. He had formerly removed a portion of the lip for epithelioma in a number of cases, with perfectly good results, but he thought the rule would not apply to the breast, and here he would not only remove the entire gland when only a portion was invaded, but would also dissect out the axillary glands.

DR. H. J. BOLDT then read a paper on

THE TREATMENT OF POSTERIOR DISPLACEMENTS OF THE UTERUS.¹

The discussion was postponed until the next meeting.

TRANSACTIONS OF THE OBSTETRICAL AND GYNECOLOGICAL SOCIETY OF WASHINGTON.

Stated Meeting, December 20th, 1889.

DR. J. TABER JOHNSON, *President, in the Chair.*

The paper of the evening was read by DR. G. B. HARRISON, on

THE INJURIOUS INFLUENCE OF LOWERING TEMPERATURE AND NIGHT
AIR UPON CHILDREN ASLEEP.²

DR. S. S. ADAMS opened the discussion. He first referred to the proposition of Finlayson that the daily normal range of temperature in healthy children varies 1° to 2° or 3°; in the sick the variation is greater; this he very much questions, and his experience at the Children's Hospital, where the temperature is taken at 9 A.M. and 9 P.M., besides intermediate hours, does not uphold this estimate.

In the cases of tracheal diphtheria referred to, twenty to twenty-five per cent does not seem to be a large percentage in young children in an institution of that kind, and the transference of the children to other better ventilated rooms may not be the only cause of the cessation, but may have been due to lack of susceptibility.

Relaxation does take place during sleep in both adults and children, and they are more liable to the influence of cold; the heat dissipation during sleep continues, whereas heat is not augmented so rapidly as in waking hours.

He questions the statement of there being a difference of 2° in the temperature under mosquito bars. Knows the temperature is higher, but hardly that degree of difference. He regrets Dr. Harrison made no reference to sleeping out of doors—only to exposure. Sleeping bags are objectionable, there being no ventilation or free motion possible, but thinks sleeping drawers are desirable for children.

DR. BUSEY called attention to the first and second statements of Finlayson, as quoted in the paper, and said he did not believe there could be in health a range of 2°, and an evening fall of 2° or 3°. If it was true, no one could determine when a child had fever.

In young children ephemeral fevers were quite common, and such marked range of temperature would indicate some indisposition characterized by fever.

¹ See original article, page 578.

² See original article, page 610.

Sleeping in the night air was injurious to very many persons, and especially so to children, but not always so.

When the temperature was high and the air dry, and in high and dry localities during the seasons of warm weather, it was not so injurious. Soldiers in the field did not appear to suffer very much from sleeping in the open air on the ground; it may be they became acclimated. Sleeping on the ground floors of dwellings was quite frequently a cause of sickness.

Mosquito canopies about a bed diminish the circulation and interchange of air. The air inside a canopy was warmer than outside, when the bed was occupied. So did wire screens in the windows diminish the ventilation of the apartment and lessen the ingress of outside air.

The finer meshed the canopy or wire screen the greater the diminution of space through which the air could pass; and when a window or doorway was protected by such a screen, the space was diminished in proportion to the closeness of the mesh, and consequently the interchange of air was lessened.

Dr. Cook said he could not see why night air is more injurious than day air. The germs are less stirred up at night, and he would ask why it is so considered.

Dr. HAGNER spoke of the influence of night air in inducing catarrhal affections, those who sleep with their mouths open being more liable to such affections, the air not having been warmed and purified by its passage through the nasal channels. He also spoke of the common custom of changing the flannel worn in the day for cotton nightwear, and urged the use of flannel night clothes, as it is at night that the body requires the greatest protection, and he believes when this is neglected the wearer suffers therefrom. When two or more sleep in a small room he thinks night air preferable to closed windows.

Dr. Cook said he did not refer to sleeping in a small room, where, of course, the air becomes vitiated, but in sleeping in a suite of rooms he could not see why the admission of night air under these conditions was injurious. He referred to those persons who live in the country, who almost invariably sleep in cold rooms, and their health, as a rule, is better than that of town people, and catarrhal affections among them are more rare than in city people.

Dr. ADAMS spoke of the variation in the temperature. He referred to the case of a child with pulmonary tuberculosis whose daily range of temperature was over 7° , and on one day a range of $9\frac{1}{2}^{\circ}$; another case in which the range was between 6° and 7° , the temperature falling lower than the thermometer registered. He mentioned these to call attention to the great range in pathological conditions.

Dr. KING said he concurred in the main with Dr. Harrison. In answer to Dr. Cook he would say that night air is damper. All of the vital processes are reduced during sleep, therefore the vital or nerve force is less at night. He also referred to the possibility of the existence of night germs as well as night and day birds and flies. He spoke of the habit of animals who sleep out of doors of burying their heads under their wings or close down to their bodies. Besides, darkness is depressing while light is stimulating. So at night we have darkness, dampness, cold, and possibly nocturnal germs.

Dr. Cook asked Dr. Busey, in the case of a man who is occupied at night and sleeps in the day air, is he more liable to disease than if he followed the opposite course?

Dr. HAGNER spoke of the sensation of glow and tendency to moisture of the body just about as one goes to sleep. This is, he considers, another reason why we should not be exposed to the cold night air while sleeping. He spoke of the necessity for having something thrown over the body when sleeping, whether winter or summer.

Dr. H. L. E. JOHNSON spoke of the dew point being higher at night; also that the greatest decay in plants occurs when there is the greatest change in day or night temperature; also that there is an excess of ozone in night air; the plants give off CO_2 during night hours, and steel rusts at this time. All these things point to a certain difference in day and night air. He referred to the effect of wire screens in windows.

Dr. W. W. JOHNSTON spoke of the great range of temperature in healthy children. He referred to a thesis prepared by a graduate of the National Medical College a few years ago, in which were given the results of several months' daily observation of the temperature in healthy children, the variation being quite remarkable.

Wunderlich gives the normal range from 97.4° to 99°; 98.4° is not uniformly the normal temperature. Sleeping in bedrooms with open windows is generally sleeping in a temperature of 50° or lower; during this time the body is heavily covered, but the head is uncovered; we would not think of thus exposing ourselves to such a temperature with uncovered heads during the day. Animals cover their heads during sleep in an apparent effort to exclude air. An excess of carbonic acid is soothing, just as an excess of oxygen is exhilarating. Open windows, in certain constitutions, may therefore hinder sleep for this reason. He thinks the custom of wearing night-caps a good one, and may be suggested as prophylactic against cold.

Dr. HARRISON, in closing the debate, spoke of the habit of the aborigines of sleeping with their hands over their mouths; he supposed this was to warm and sift the air. He referred to a family who recently suffered from lung trouble, brought on, it was said, by what was intended as a hardening process. He questioned the assertion of Dr. Cook that country people are more healthy than those who live in cities; his experience is that catarrhal affections are very frequent among them. He believes in keeping children in as high a temperature at night as in the day. Most of the complications in scarlet fever are due to neglect of the precaution of keeping children in a high, equable temperature.

In an epidemic of forty cases in the Orphan Asylum there was not a single kidney complication, on account of care in this particular.

He also spoke of the value of woollen clothing, as it is a poor conductor of heat and a good conductor of moisture.

TRANSACTIONS OF THE GYNECOLOGICAL SOCIETY OF CHICAGO.

Annual Meeting, October 18th, 1889.

The President, CHARLES T. PARKES, in the Chair.

PRESIDENT'S ADDRESS: SPINA BIFIDA.

... One of the departments promulgated in the organization of this Society was that of Pediatrics, and I have thought that perhaps it would be of interest to you for me to present very briefly this evening some experience I have had in that department during the past year. This will consist in the presentation of three cases of spina bifida subjected to surgical operation. For all time past, surgeons have been very anxious about the care that should be given to such cases, owing to the fact that a large percentage of the cases operated upon has been followed by fatal results. And they have felt disturbed about them because these patients as a rule, if left to themselves, succumb at an early period to a fatal ending. So it seemed to me the presentation in a few words of these cases might be interesting to you, and possibly a suggestion as to some absolute rule which could be adopted towards their cure. And as well it may be of interest for me to very briefly go over the sayings of some of the authorities I have been able to consult, and present a few statistics.

Koenig says that out of ninety cases only twenty reached the age of five

years, and that the majority of cases that live any length of time show paralysis of some muscles from pressure. If the sac suffers rupture the case may die from loss of cerebro-spinal fluid, or, more rarely, from some form of spinal meningitis. He suggests, as methods of treatment, that compression is useful only in rare cases. In puncture the head of the child must be placed low in order to prevent the too rapid escape of the fluid, which gives rise to convulsions and death. Koenig lost a case in this way. (Within eight months I have seen a similar case in the practice of a well-known physician of this city. The child was subjected to puncture, when not more than a drachm of fluid was drawn away, but death ensued immediately.) Puncture prevents rupture of the sac, and may cure in rare cases. The most complete antiseptic precautions are necessary in practising this method. He recommends, also, puncture, with injection of the following solution: viz., iodine, gr. iv.; potassium iodid., gr. xij.; aqua destillat., $\bar{3}$ i. After puncturing the sac with a hypodermic syringe and closing the opening into the spinal canal with the finger, the barrel of the syringe is filled with the above solution, which is injected into the cavity and left for a few minutes. The sac is then emptied and refilled with pure water. If no harm occurs, this is repeated often enough to cure. Debout (quoted by Koenig) collected sixteen cases treated in this way, with fourteen cures. Koenig reports one case cured by direct incision and close suturing. Nelson reports one case cured by incision under antiseptic gauze.

Prof. Albert, of Vienna, gives the following summary of treatment: 1. Tapping. Sir Astley Cooper had one successful case. Our experience with puncture of hydrocele, under antiseptic precautions, would indicate that there would be comparatively less danger in this method, but not much hope for cure. 2. Drawing woollen threads through the sac to excite adhesive inflammation has been used, but the case ended fatally from spinal meningitis. 3. Compression has cured in extremely rare cases. 4. Ligature *en masse* in the pedunculated forms has succeeded in a few cases. 5. Puncture with subsequent injection of iodine has been introduced by Velpeau. Chassaignac has had a number of brilliant results from this method, but it must be remembered that it should be applied only in cases in which there is a small pedicle, which has to be constricted at the time of using the injection. 6. Excision has had some good results, and certainly promises well under antiseptic precautions. Dr. Robert W. Parker, of London, withdraws a portion of the fluid from the sac with a hypodermic syringe, and then injects with the following solution: Iodine, gr. x.; potass. iodid., gr. xxx. to $\bar{3}$ ij. Albert gives a number of cures in the following table, compiled by Marchand:

	Cases	Cured.	Died.
Compression	4	4	—
Puncture	57	17	40
Injection	55	42	13
Ligature	16	10	6
Excision	8	6	2
Incision	5	2	3
Amputation	5	4	1
Plastic	3	1	2
Total	135	86	67

Over 50 per cent, as you see. This method is adapted to those cases in which there has been some attempt apparently on the part of Nature to shut off the sac from the general cavity of the spinal canal, even if there is a somewhat pedunculated condition of the mass. But all authorities agree that some other method of treatment should be adopted if the formation is sessile—that is, in cases in which the greatest circumference of the mass is at its base. It is said that these cases, if treated by injection of the tincture or any preparation of iodine, would be certainly damaged, and death would probably result from inflammation of the spinal meninges.

It is hardly necessary for me to speak of the condition of the tumor itself further than to say that there are three recognized varieties. In the simplest form there is merely a protrusion of the membranes of the cord, and the sac is made up entirely of this protrusion and contains none of the elements of the cord—meningocele. Another variety is that which contains in the interior surface of its walls formations of the spinal cord—or a myelomeningocele. A third variety consists of those peculiar and very infrequent cases in which the central canal of the spinal cord is dilated—a syringocele, as it is termed. We can understand that any operative procedure that concerns the spinal cord is serious; but in these latter days, when surgeons attack the brain in all its parts for many varieties of disease, and perform the most rigorous operations on the cerebral hemispheres with success, it should not be thought harmful to subject the spinal cord to simple procedures in proper cases, in the hope of benefiting them.

So in the cases, three in number, that have been presented to me for care in the last six months I have adopted the plan of opening the sac freely, isolating the lining membrane of the sac (which I have found can be easily done), and removing it close to the opening in the spinal canal. After isolating it from the other elements of the sac well down to the spinal canal, I ligate it with catgut ligatures, and then sew up the remnants of the sac wall with three series of sutures. The first one brings the sac wall together as close down to the opening in the canal as it is possible to place the stitches; the second series brings the walls together half-way to the edge of the incision; and the third series closes the external wound. None of the sutures passing through the skin are permitted to enter the deeper layers.

The first case that came to me was a little child, of German parentage, four weeks old, badly nourished, small, and cachectic. There was a bluish-red, fluctuating, translucent tumor in the lower lumbar region, three inches in diameter, with a moderately marked pedicle an inch and one-half in diameter. The fluid could be reduced by pressure, which induced evident pain and crying, and if persisted in would probably have brought on convulsions. This child was prepared for operation very carefully, as far as the surface of the body was concerned at the seat of operation. It was scrubbed several times with soap and water, and then several times with bichloride; then the area of operation was surrounded by aseptic towels. An incision was made directly through the centre of the tumor, and of course the fluid escaped; but there was no evidence of nervous irritation in the child. An assistant's finger was kept in the opening, which was seen, about as large as the end of the little finger, through the lamina of the vertebra, so as to prevent too much of the fluid escaping from the spinal canal. The

first thing I noticed was that running through the centre of this cavity was a little ridge covered by the lining membrane. In examining this ridge more closely I found it was made up of the terminal nerves of the spinal cord. These were dissected very carefully away from the top surface of the sac wall, the covering of the interior of the sac was also removed, and they were dropped directly into the cavity of the spinal canal, without severing them, with the exception of two branches which seemed to pass off laterally. Then the lining membrane of the sac was separated in all portions with the handle of the scalpel until it represented merely a little pouch sticking out in the opening of the lamina. This was puckered up and then ligated as close down as possible and cut away without leaving anything but the internal walls. Then a continuous catgut suture was applied, bringing together the walls of the sac close down to the spinal canal; then a second and a third were applied to the mass of tissue, then the skin edges were approximated to each other. This patient was a small, badly-fed youngster, as weak as is likely to be seen, and one that you would not think could stand an operation of this kind; but he showed no bad symptoms after the operation. There was no rise of temperature and no pain, and the healing process was completed inside of ten days. Of course great care was taken in the application of aseptic dressings and the prevention of discharges from the rectum and bladder from coming in contact with the wound. The child recovered entirely. For two weeks after the operation there was a partial paralysis of the lower extremities; but this gradually disappeared, so that tickling the soles of the feet or pinching the surface of the limbs caused a movement which showed that the child used his limbs without difficulty.

The second case was certainly one of myelo-meningocele, as the elements of the cord were in the sac and attached to it. He was a very robust little youngster, seven weeks old, of German parentage. This little one had a spina bifida at the upper portion of the lumbar region which was fully three inches across in either direction. It was not pedunculated to any great extent. It was ulcerated on the surface. The child was put to sleep and treated in exactly the same way as the case I have just related. In this case there were not so many of the elements of nerve tissue as in the other, but some of the nerve fibres ran over the surface of the sac. There is an external sign which plainly indicates the presence of the elements of the cord in the sac, in many cases. You will find a distinct furrow running along the centre of the sac, at other times a distinct depression of the posterior surface of the spina bifida. In this case there were no such signs. The opening in the lamina was as large as the end of the middle finger. The same procedure was adopted as in the preceding case. Nothing could have come off more readily than the internal lining of this spina bifida, and the loose tissue between it and the sac walls was easily demonstrated. There was no difficulty in ligating the sac walls separately. This child recovered without any evidence of trouble.

The third case was a cachectic child four months old, of German parentage, with good family history. It was a pure meningocele. The tumor occupied the middle dorsal region. Its walls were very thin, and the surface had begun to ulcerate. The fluid could be displaced into the spinal canal without difficulty, but the manoeuvre was accompanied with signs of pain, crying, and distress. When the fluid was displaced the opening could be

felt, and was sufficiently large to represent the width of two laminæ. In this case I did the same operation as in the other instances. I had no difficulty whatever in separating the arachnoid membrane from the interior of the sac, but experienced difficulty in fastening it at the bottom, owing to the size of the opening. The others were comparatively small, this was large. In this case I departed from what I consider should be an absolute rule—viz., the sutures which approximate the sac wall close to the spinal canal should never be allowed to pass through the integument. I was dissatisfied with the appearance of the stump, and passed a suture through the bottom and tied it in two places so as to make a little more pressure on the opening of the spinal canal, with the idea that the fluid would be retained better. The child did well for a week, then showed signs of fever and passed on to septic meningitis, from which it died.

I think these cases are very interesting as far as they go. This operation is certainly as safe as injection, which is always accompanied by a certain amount of danger, because one cannot always be sure that the interior of the sac is cut off from the spinal canal. . . .

Regular Meeting, November 22d, 1889.

The President, JAMES H. ETHERIDGE, in the Chair.

OUTERBRIDGE'S INTRA-UTERINE STEM PESSARY.

DR. D. T. NELSON.—I have some instruments here that may be suggestive, perhaps. We have all used all types of intra-uterine pessaries, I presume, for sterility and flexion and the like. Here is the latest that you have seen, or seen the pictures of at least—Outerbridge's, of New York. I have used them with some degree of satisfaction, and yet sufficient time has not elapsed for me to say definitely what their advantages or all of their disadvantages are. One disadvantage I have found is that the plating after a little time, in some cases, is destroyed by the secretions, and we have the metal beneath, which I believe to be iron, exposed. It does no practical harm except that the instrument cannot be worn a great while after the plating is removed without becoming irritating to the tissues from corrosion. There is a special instrument for their introduction which I find quite important. It is a pair of forceps-like short blades which compress these points. They are small enough so that, theoretically, they can be passed with the pessary into the uterus, but practically the cervix has to be dilated before they can be introduced, and then the forceps are withdrawn. Seeing some of Spichen's hard-rubber drainage tubes, it suggested itself to my mind at once whether an instrument might not be made of the stem-pessary type in the same way by simply adding a disc to the end to prevent their being pushed into the uterus. I have not used them yet, having just received them from the manufacturers, Charles Truax & Co., and have brought them here for criticism and suggestion. I can readily see that probably they may be difficult of removal if they were pulled straight out, and might be broken, but they can be readily unscrewed by turning like a screw. This is certainly large enough for any purpose that might be desired. Their advantage over any of the models I think will be acknowledged by any one: they are flexible, so as to allow any position of the uterus and still keep its canal patulous. Their inflexibility is one disagree-

able thing about the metal stem pessaries; these have not that objection. What others they may have subsequent trial will give us a better opportunity to decide.

DR. E. C. DUDLEY.—I have heard that an intra-uterine pessary is a good thing to watch, and think it is so good a thing to watch that I have never had any experience in using it. The uterine canal is a natural drainage tube, and most of the intra-uterine stem pessaries impair it as such; consequently the secretions are retained and become decomposed, with all the unfortunate results of such decomposition. This intra-uterine stem pessary of Outerbridge's that Dr. Nelson has shown obviates that difficulty; it does not interfere at all with drainage, and it seems to me to fulfil the indications of an intra-uterine stem better than any other instrument. I have used it in but one case, but can make no report yet, except that the instrument is tolerated without discomfort. The uterine secretions should not corrode the metal if it is gold-plated.

DR. NELSON.—There is just the point—it is not thoroughly plated; there are infinitesimal cracks in the plating, which are the cause of the secretions injuring the metal underneath. I have used several of them, and two, at least, have given me that annoyance, so that I was obliged to remove them.

DR. JAGGARD.—I believe that pessary was introduced with an idea of the treatment of sterility. I would like to ask what the results have been in that respect.

DR. NELSON.—I may answer for myself: I have one case I suspect it was a cure for, but I am hardly able to report more than progress as yet. In one case it was used for dysmenorrhea, in which it has seemed to be a perfect cure. In other cases wearing it, sufficient time has hardly elapsed to report even progress.

DR. DUDLEY.—In dysmenorrhea and sterility, with stenosis of the uterine canal, the dysmenorrhea and sterility are due not so much to the mechanical difficulty in the way of menstruation and of pregnancy, as to the fact that the stenosis causes a retention of the uterine secretions, which become decomposed and which irritate the uterine mucosa, which being thus irritated causes pain in menstruation and also furnishes such hostile surroundings as to make it impossible for the impregnated ovum to develop. This pessary of Outerbridge, by establishing perfect drainage in these cases, fulfils a very important indication.

PATIENT UPON WHOM CONSERVATIVE CESAREAN SECTION HAD BEEN PERFORMED TWO YEARS BEFORE.

DR. W. W. JAGGARD desired to exhibit a woman upon whom two years before he had performed the operation of conservative Cesarean section. In order to gain adequate knowledge of the prognosis of the operation, it is necessary, once in a while, to call the roll. Menstruation, re-established within six months after operation, recurs every three weeks, and is profuse though not painful; before the operation it was of the four-week type and scanty. Uterus is in mobile anteversion, and there is an adhesion between the abdominal cut and the fundus. Patient has not conceived since the operation.

There is present a large abdominal hernia that occurred, one year after operation, suddenly, upon lifting a heavy washtub. During the operation Dr. Jaggard was careful to cut between the recti, and is certain no muscular tissue was divided. Of course tendinous bands and the sheath of the muscles were severed. She wore a "jockey strap" for twelve months.

The patient's general health is excellent, and she leads a busy life as a midwife. She is confident that she will become pregnant before another

year, and awaits delivery as the best time for the cure of the hernia. The child died sixteen days after birth, from pneumonia due to exposure.

DR. NELSON.—Did the hernia supervene directly after she got up from bed?

DR. DUDLEY.—I heard of a man who had a patient with a great deal of fat on the abdominal walls; he took out an elliptical piece and then could not get the abdominal walls together again.

DR. EARLE.—There would be the same hope of success here as with any other hernia of its size in the same position. The size of the hernia reminds me of one I saw in Michigan three or four months ago. A sister came over and talked with me about the condition of the patient, and I selected Dr. Hoadley to go over there with me and see the hernia, and prepared to do an operation in case it was necessary. The hernial sac and protrusion was much larger than this, two or three times as large, with two or three points of ulceration that had almost come through. The incision was as large as a good-sized saucer in circumference, and the sac was taken off. The omentum was found to be adherent in a multitude of places. It was united, sutured, and the wound healed very well. The hernia has not recurred up to this time.

DR. DUDLEY.—I would make an incision here into the abdominal cavity, removing such redundant skin as the mechanics of the operation might require; I would then take the edges of the fascia which were incised in dividing the recti, one over the other; then I would split the abdominal wall on each side by using a method similar to that employed in Tait's operation for perineorrhaphy, and in that way get a surface for union, then close the wound by three sets of sutures, peritoneal, fascial, and deep.

DR. NELSON.—I would suggest some buried sutures running in either direction, to bring the fascia together.

DR. DUDLEY.—It is not necessary to bury them; they can be passed from the skin to the fascia.

DR. JAGGARD.—As the woman is now, with a well-fitting strap, she can keep the hernia inside.

DR. DUDLEY.—It is an awkward thing to do, and a radical cure could be effected.

DR. JAGGARD.—She hopes to become a mother.

DR. DUDLEY.—She cannot be killed; that has been tried.

PLACENTA MARGINATA.

DR. W. W. JAGGARD.—The specimens I want to call your attention to, gentlemen, present several points of interest. In the first place, I have here a very interesting specimen that Dr. Sawyer kindly gave me to show to my class. Here is the chorion and here the placenta. At the edge of the chorion, between it and the placenta, there is a circular band that, in the recent state, was white, hard, even gristly. On section you see the white, gristly substance; you can see also the hard, fibrous tissue distinct from the normal placental tissue. It is a typical example of a very interesting condition technically known as marginal white infarct. It is probably due to hemorrhage occurring in the early months of pregnancy about the time when the circular band is formed.

SYPHILIS OF THE PLACENTA.

The second specimen is an interesting one which Dr. Watkins gave me. There are two interesting anomalies in connection with it: First, the insertion of the cord into the membranes—velamentous insertion of the cord. This is a typical example. I would like to call attention to the velamentous insertion of the cord in connection with the very interesting paper our Sec-

retary read at the last meeting of the American Gynecological Society, in which he referred to the insertion as one evidence of a very ingenious theory of the cause of placenta previa. I am not able to agree with the Secretary in his opinion on this matter, because the weight of evidence is to the effect that the insertion of the cord depends on fetal causes and not on causes external to the chorion. It does not make any difference how many revolutions the ovum may have made, the insertion of the cord depends upon the spot that the allantois strikes, not on any exterior cause, so far as we know. But the point of special interest is that this specimen is alleged to be an example of a syphilitic placenta. It has the general characteristics of a syphilitic placenta. It is relatively large, and was pale in the recent state. On section you can distinctly see nodules. One test of a syphilitic placenta is, on microscopic examination, the detection of gummata. The only condition resembling the syphilitic placenta is the condition presented here, the white infarct.

WHITE INFARCT OF THE PLACENTA.

This case I came into possession of an hour ago by the courtesy of our President. This is a typical white infarct. It may be remarked, in passing, that Fraenckel has never been able to demonstrate syphilis of the placenta earlier than the sixth month.

MYXOMA MULTIPLEX OF THE PLACENTA.

This case is one I saw in consultation with Dr. McGaughey. It is interesting because it is an unusual anomaly. It is myxomatous degeneration of the placenta. Clinically, it presented the symptoms of accidental hemorrhage from premature detachment of the placenta. The cord is long and normal. The fetus has a double harelip, and webbed toes on the right foot. The fetus was dead some time before delivery. Whether there is any connection between the harelip and the anatomical change in the placenta is not demonstrated, but it is likely.

A CASE OF SYPHILITIC PLACENTA.

DR. T. J. WATKINS.—The history of the case referred to by Dr. Jaggard is brief. I was called in to attend the woman, who was about six months pregnant. I found labor quite well progressed, and the child was delivered about two hours after I arrived. It was dead, and had been for some time, as sufficient decomposition had taken place to nearly remove the epidermis. The placenta came away very readily, and I then noticed its peculiar character. Dr. Jaggard kindly took charge of it, and promised to present it to the Society.

The woman gave no history of syphilis; but she was very anemic and had a mitral heart murmur. I could find no other cause for this than that it might be due to syphilis. Her heart had caused no disturbance before, but commenced to trouble her two or three months after she became pregnant. Examination of the urine was negative. The husband probably had had syphilis, for he had been treated for it a number of years before. Another point in the case which makes it presumably a case of syphilis is the fact that under bichloride of mercury and iodide of potassium treatment she has improved wonderfully.

MACERATED FETUS.

DR. J. C. HOAG.—Some time ago I read a paper before this Society on the subject of "Macerated Fetus" in which I detailed a case that had come under my observation where a woman had given birth to three such fetuses. The case is one which interested me a great deal, and I have had the patient under observation since. I had no thought of presenting it to-night, but it was brought to my mind by the general subject of diseases of the placenta. I attended this same patient again last April, when she gave birth to her *fourth* macerated fetus. Meanwhile she had been under treatment to some extent. I saw her only at long intervals, and she had been given iodide of potassium and a small amount of mercurials. I have not been able to detect any syphilis in the family, but, whether owing to the treatment or not, she carried this fetus a month longer than any of the others, and the fetus when born represented a development of seven and one-half months. I shall still watch this case with interest, and perhaps shall be able to get some more macerated fetuses.

Regular Meeting, January 17th, 1890.

The President, JAMES H. ETHERIDGE, in the Chair.

DERMOID CYST OF OVARY; TWISTED PEDICLE; RECOVERY.

DR. DANIEL T. NELSON.—The contents of the tumor were entirely of a kind of wheel-grease, sebaceous matter. There was about a gallon of it. It has kept very perfectly without any preparation except being bottled. There were a few short hairs, but no teeth or bones.

The following is a brief history of the patient:

Mrs. G. B. R. Puberty at 14; age 57; married thirty-six years; two children, 33 and 29 years, both girls; first weighed nine pounds, second six; was in bed at each confinement ten days; nursed both children. Has had three attacks of pneumonia, first while a girl before marriage, ill five to six months; second in 1864, ill a month; third 1880, ten days in bed. During convalescence, while sitting up, suddenly expectorated some four or five ounces of pus and then rapidly recovered; but has since had a cough on rising from her bed in the morning and on lying down. In June, 1888, had a slight attack of peritonitis lasting some three days; hardly in bed. Suffered from soreness for some days after. A second attack of peritonitis occurred in October, 1888; was in bed a week, soreness continuing for a week or more longer. The third and last attack of peritonitis began May 23d, 1889, and was produced by stooping in her garden to pick some lettuce. She took to bed that night and was obliged to remain a month. She suffered greatly for some days, and for a time her life was endangered. Was confined to her house two months. During all of these attacks of peritonitis her bowels were never confined for many days, and at other times were regular or easily moved by simple laxatives.

The patient came for operation on the tumor, which was recognized months before, on the 30th of November. She was of a decidedly corpulent build. The usual abdominal incision was made; some three inches of adipose tissue had to be passed through before the abdominal cavity

was reached. The tumor was found adherent to the whole anterior peritoneal surface, but the adhesions were apparently of recent date. The abdominal incision was made some ten inches in length, the whole size of the tumor. This was necessary in order to pass the hand around the tumor to free it of its adhesions. This was done without causing severe hemorrhage or injuring any of the viscera. After the tumor was freed from its adhesions it was opened by the trocar, but there was no discharge of fluid, which was easily explained on the withdrawal of the trocar, when sebaceous material began to well out; the opening was enlarged and gradually the whole contents of the tumor were evacuated without any passing into the abdominal cavity. When I was able to see the pedicle it was tied and cut off. It is just about the size of an ordinary lead pencil, and was twisted three complete revolutions. The pedicle was afterward tied a second time and cut off, so I have this part to show you to illustrate its size. On account of the adhesions I was not able to satisfactorily locate the origin of the tumor. I believe it represented fully and completely the left ovary; it was all I could find of that ovary. The left Fallopian tube was adherent to the exudate about the tumor; the right ovary and tube were also inflamed and adherent, but could be found: I could not find the left ovary. Of course I did not make as careful a dissection as if it had been a post-mortem case. But the condition of the pedicle astonished me; it did not seem that any blood could pass through the original vessels of the tumor. The tumor had not sloughed, being nourished by the new vessels it had acquired from recent adhesions. It is possible, of course, that there was some blood supply in other ways, but it seemed as if no blood could pass through the natural pedicle. After the last attack of peritonitis the statement of the friends was that she had seemed to grow considerably smaller in size. Whether it was because the peritoneal effusion was completely absorbed with the fluid portion of the cyst or not, there was absolutely no fluid with the sebaceous material at the operation.

The after-treatment was exceedingly simple; a glass drainage tube was introduced, which was subsequently removed and replaced by a short rubber tube. The extreme temperature of the patient reached $100\frac{1}{4}^{\circ}$. A troublesome cystitis was induced by the use of the catheter, and lasted about a week. This gave the patient more annoyance than anything else about the operation.

I have seen two cases of twisted pedicle, one in the case of a solid tumor which was removed post-mortem. There was twisting of the pedicle and a peritonitis that so endangered the life of the patient that I did not dare operate, but the post-mortem showed that her life might probably have been saved if operation had been attempted.

The instruction to me is that a peritonitis coming on after exertion, in a patient with a movable tumor, indicates twisting of the pedicle, and, if the case is grave, operate before the peritonitis kills the patient. If the attack is slight it may be well to wait until the peritonitis has passed by; yet it would seem from the treble twisting in this case that waiting was dangerous, the third attack of peritonitis being much the most severe, and the third twist of the pedicle almost cutting off the blood supply; there was

grave danger of the complete death of the tumor. If the peritonitis endangers the life of the patient, operation should be proceeded with at once.

PLACENTA SUCCENTURIATA; VAGINAL HYSTERECTOMY.

DR. HENRY T. BYFORD.—I have here a placenta succenturiata which, however, is chiefly interesting from the history of the case. About three years ago I confined a primipara, who had a child at full term after being married three or four months. She was in very bad mental condition, and came to the hospital to conceal the birth. The uterine contractions were so inefficient that I finally had to put her under chloroform and deliver with forceps. Immediately after delivery of the placenta blood poured out of the vagina like water from a kitchen hydrant. I succeeded in checking it only temporarily and partially by bimanual pressure and manual irritation of the interior of the uterus. I then injected tincture of iodine one part and water three parts into the uterus without any effect whatever. Then I injected the pure tincture of iron and immediately checked the hemorrhage. Her recovery was slow but uneventful.

She was again confined this morning at 2 o'clock. The membranes ruptured several days ago, above the cervix somewhere, the fluid gradually escaped, and labor came on last night between 6 and 7 o'clock. All went well, and the child was delivered, without injury to the perineum or cervix, at 2 A.M., but the placenta did not come. I used Credé's method of expulsion, and then some traction, but without the least effect. Finally I put my hand into the uterus and attempted to deliver. I found all of the placenta except the lower margin, and the whole of the membranes from the top to the bottom, completely adherent. You will notice that the membranes are abnormally thick and vascular. I went over every part of the endometrium with my fingers, and over some portions three times before all shreds were removed and the uterus contracted. The patient has done well since. The extent of adhesions was, in my opinion, determined by the iron injection three years ago.

Another interesting fact in connection with the case was the breaking of the membranes before labor came on. This was, I think, due to the adhesions of the membranes caused by the endometritis, and bears out what I have formerly asserted, that patients who have uterine disease will, in a large number of cases, have the membranes rupture at the beginning of labor. In other words, where the membranes are pathologically adherent they are unusually distended in an irregular manner and rupture early; where not thus adherent they gradually separate from below upward, and accommodate themselves to the parts and rupture at the vulva.

This other specimen I wish to place on record as being another fibroid uterus removed through the vagina. It is my third vaginal hysterectomy for fibroids. There are several small fibroids in the uterus, but that in the cervix was the one which was the cause of the greatest anxiety. It seemed to be assuming the characteristics of malignancy. It was very dark and angry-looking from its excessive vascularity, bled easily, and was bathed in suspicious secretions. Hemorrhages and irritating discharges were the chief symptoms.

DR. W. W. JAGGARD.—I think the use of the tincture of chloride of iron was a sufficient cause for the endometritis, the universal evidence of which

is present; but that it was *the* cause, and the only cause, I do not think is proven. It is a difficult thing to prove that an injection of tincture of iron several years ago was the cause of endometritis at a subsequent pregnancy. The endometritis might have occurred from gonorrhea or half a dozen other things. I think the gentleman should give the history of that case minutely and let it go on record.

As regards the normal separation of the membranes, it is pretty well established now that normally the membranes are not separated above the internal os, therefore their functions as dilator of the vagina and vulvar orifice is accidental and not of sufficiently frequent occurrence to entitle them to much consideration, though when they are present they have some action.

In regard to the second specimen, I would like to ask if there was a microscopic examination of the neck of the uterus before the operation. A tumor of that size is not, *per se*, an indication for operation in my judgment.

DR. J. H. ETHERIDGE.—The one thing that occurs to me as a little difficult to accept is the assertion that the administration of the tincture of iron is the cause of the adhesion of the placenta three years afterwards, because the constant nutritive changes that have taken place in the whole of the uterus are so great that it seems to me the irritation produced by an injection of tincture of iron so far removed would be entirely obliterated. If the present adhesion of the placenta were caused by endometritis, it seems to me it might be the same endometritis that existed at the time the hemorrhage occurred which called for the use of tincture of iron. I think there is plenty of reason for adhesion in this instance without the exceedingly problematical theory of irritation produced by the tincture of iron. Indeed, I should consider that a very effective barrier against the possibility of pregnancy, which barrier evidently did not exist.

I would like to ask if it is the experience of the gentlemen present that it is always absolutely true that sarcomatous or cancerous cells can be obtained in every specimen of malignant disease of the uterus. The reason I ask is because I know of a case where, according to all possible signs short of the microscope, a woman died of cancer of the uterus, but the examination of a specimen submitted to microscopists resulted in their stating that they could not find any evidence of cancer.

DR. BYFORD.—I will state, with reference to the nature of the second specimen, that in one case I removed post-mortem a fibroid sarcoma of the uterus with development of sarcoma into the mesenteric glands and different parts of the body, in which the microscopist was unable to determine whether it was fibroma or sarcoma until I told him there were deposits in the neighboring glands.

My idea is, in reference to this disease of the cervix, that when a woman has reached the menopause—she was 43 years old—in connection with symptoms indicating malignancy, we are sometimes justified in removing the uterus even without microscopic confirmation; for the microscope does not always find the malignant element, and when it does it is often too late. We have numerous records of changes in the cervix from one form of malignancy to another, and also of the co-existence of small uterine fibroids with malignant disease of the cervix or corpus uteri. If vaginal hysterectomy is ever to have a future, it must be employed before too much time is lost in waiting for evidences of malignancy and results of tampering treatment. Men still tremble in their boots at the thought of the operation, while its mortality has been already reduced to that of ovariectomy, and almost to that of high amputation of the cervix for carcinoma. This unenlightened conservatism is the blight of vaginal hysterectomy.

I must decidedly disagree with the speaker that the membranes remain attached throughout until the end of the first stage of labor. It is impossible for them to do so during the changes in the shape and size of the different parts of the uterus in labor. This I have already discussed in the *Annales de Gynécologie* (Paris), 1886.

In regard to the effect of the tincture of iron in producing these adhesions, the history of the case favors my view. I had the patient under ob-

ervation from the time of her first pregnancy. I prevented her having a miscarriage, and have had abundant opportunity to watch her ever since. I am certain there has been no new attack of endometritis since the first labor. She probably had some endometritis at the time of the first labor, and the iron increased it. Although no serious symptoms followed the iron injection, a slight elevation of temperature remained for some time, and it was nearly a year before she recovered good health and ceased to complain of a weak back.

HYSTERECTOMY CLAMP FORCEPS FOR VAGINAL FIXATION OF STUMP.

DR. HENRY T. BYFORD.—I brought this forceps to-night because I happened to refer in my report to a case of vaginal fixation of the stump in abdominal hysterectomy. The forceps is introduced through the vulva, catches up the stump, holds it firmly, and can be made to clamp it in case hemorrhage occurs. In my first case I left on the elastic ligature and got myself in rather a bad fix with it. In a few days the temperature went up to 102° F. and the odor became very bad. I put the patient on the side, introduced a Sims' speculum, cut off the ligature, and then easily cut off the stump down to the constriction. The patient got along very nicely afterward. In the last case I stitched the stump very much after the method of Schroeder or Martin. I separated the parts in front of the cervix, turned it into the vagina and transfixed it there with a pedicle pin and thus avoided necrosis. The cervix when released turned up again into the cellular tissue behind the bladder, and is now in a normal position, although entirely extraperitoneal. The patient has gone home and feels well. This forceps I have devised so that I can sew up the stump with catgut, then put the forceps on through the vagina, and use it to hold the stump in place and to check hemorrhage by tightening it if necessary.

DR. ETHERIDGE.—I never heard of twenty-four or thirty-six hours until lately. I never left on large forceps less than forty-eight hours. I take off the small forceps in twenty-four hours, but the large ones, covering the ovarian and uterine arteries, I leave on forty-eight hours. I have left a great many small forceps in the vagina, thirteen to fifteen after an operation, with two large ones, one on each broad ligament. Women differ as to their bleeding; some will bleed profusely and some comparatively little. I suppose it is a difference in the distribution of the arteries and the development of the arterial calibres, because in some instances it seems as if every particle of tissue will bleed in spite of everything, and then in other women I have left on only two forceps and have had no hemorrhage.

DR. MARTIN.—I would like to ask if in the use of large forceps there is any way of knowing that necrosis of the tissue included in these forceps takes place. Is it not possible to clamp them tight enough to stop hemorrhage, and at the same time loose enough so that a certain amount of circulation may occur and the life of the stump remain?

DR. ETHERIDGE.—I have seen several cases where the holes left in the two cornua of the vagina by the large forceps have continued to discharge for weeks necrotic material which smelled very offensively, but which after a time seemed to gradually fill up from the bottom, and there was complete restoration of all the parts. I suppose the part of the broad ligament left in the bite of the forceps was entirely killed, so that it sloughed and came away as so much dead material. I have been in the habit of directing a small stream of antiseptic fluid right up into the openings and pulling away the black material with the dressing forceps, getting away all I could by gentle traction, and after a while the discharge would cease.

DR. BYFORD.—I have seen cases in which, after putting on the forceps, all hemorrhage would be stopped, but you would find the part below so

much thicker than that above that the upper part would not become tightly compressed.

DR. ETHERIDGE.—Is not that where you turn the uterus over and double the broad ligament, so that when you get the bite of the forceps on the bend of the broad ligament it is thicker than the part above?

DR. BYFORD.—I refer to cases ligated without version of the uterus. I think it is difficult to say whether you have efficiently constricted all the parts in the forceps or not.

DR. MARTIN.—That is the point I make: in cases where the upper portion of the broad ligament is not constricted as much as the lower portion, and still hemorrhage is shut off, if suppuration might not occur?

DR. BYFORD.—I think in that case the peritoneal exudate might nourish the upper edge so that it would not slough off. It certainly does when ligatures are used.

DR. ETHERIDGE.—I suppose the whole of the peritoneal cavity is shut off at once when you put the forceps on. I do not think there is any infection of the peritoneal cavity likely to occur from the material left in the bite of the forceps, because the peritoneal cavity is effectively shut off.

ANOTHER TWELVE MONTHS OF PERITONEAL SURGERY; FIFTY-SEVEN CASES.

DR. HENRY T. BYFORD read a short paper on this subject, of which the following is a brief analysis:

All abdominal sections in which there were no adhesions (16) recovered. All vaginal sections (16), with and without adhesions, got well, excepting 1 death from delirium tremens. Of the 21 vaginal sections of the previous year, all recovered, making with those of the present year 37 cases with 1 death, or a mortality of 2.7 per cent. Hence it is inferred that abdominal sections for pelvic disease in which there are no adhesions ought, as a rule, to recover, and that vaginal section is safer than abdominal section. When extensive adhesions, development in the subperitoneal tissue, or pus accumulations occur, we have desperate cases to deal with and get a high death rate after our operations. Of the 8 deaths of this series, 5 belonged to this class, viz., 1 malignant and 4 developed in the broad ligament.

One of the most important factors in the development of peritoneal section must be the elimination of the accidental. But for a sponge left in the abdominal cavity in one case, the infection by an assistant in another, and an accidental and unnoticed rupture of the stump sac in another case, the general mortality would be 8.77 per cent instead of 14 per cent.

The determination of the utility of these operations depends largely upon the remote results. In a few of the cases of oöphorectomy for diseased appendages the cure has been immediate and complete, but in the majority the improvement has been gradual. It has been an agreeable surprise to note the excellent results in hystero-epilepsy and mental failure. Twelve cases are reported with immediate or rapid recovery in 5 cases, gradual improvement in 6 cases, no improvement in 1 case.

The author advises against waiting until too late in the attempt to exhaust all other remedial resources before resorting to the knife, as is so often done.

Four among the 8 cases of retroversion in the vaginal sections were cured by tamponing the uterus in position for forty-eight hours after the operation.

Opiates were seldom given. They are contra-indicated during the sec-

ond, third, and fourth twelve hours *post op.* Salines given during the second and third twelve hours act favorably by filling the intestinal loops with fluid and exciting normal peristalsis, thus tearing up their adhesions and forcing the fluid through them.

An almost fatal case of hemorrhage is reported upon the removal of the broad-ligament forceps thirty-six hours after a vaginal hysterectomy. Ligatures are considered safer when the uterus can be pulled well down.

Three successful sections were made upon one patient—a vaginal oöphorectomy, a laparo-hysterorrhaphy, and an inguinal oöphorectomy.

In the few abdominal hysterectomies the stump was treated extraperitoneally, and each time with success. In two cases a new method was adopted, viz., separation of the bladder and anterior vaginal wall from the cervix, and fixation of the stump extraperitoneally in the vaginal canal.

DR. JAGGARD.—I would like to make a few remarks on Dr. Byford's paper. In the first place, I wish to congratulate him on his brilliant performance and great success, which reflects credit on the Society; but at the same time there are some things in the paper that I think deserve attention. I wish to disclaim in the beginning, however, any intention of making a personal remark. This Society is the only tribunal before which the paper will come for discussion, and I do not think it ought to go on record without something being said on the subject.

We judge of Hercules by his foot; Cuvier constructed a megatherium from a tooth; Joseph Leidy constructed a fish from a scale. We are apt to form an opinion of an operator by individual specimens and examples. Take, for instance, the fibroid uterus that was presented to-night as an indication for hysterectomy. It is hardly fair to construct an operator from a single specimen, although you know a legal axiom is that a witness false in one particular is false in all. This is simply a uterus with a number of foci where fibroid degeneration has occurred. A woman near the change of life, in a few years at most the menopause would have occurred naturally, and then, in all human probability, the change would have taken place that experience and pathology teach us takes place in these growths—they undergo the senile atrophy that the uterus itself undergoes, and not once in a hundred cases do they undergo any cystic sarcomatous change. In that case, in my judgment, there was absolutely no indication whatever for removal of the organ. It was a most heroic operation, if the term reckless is a little harsh. I think where so capital an operation is done the specimen in every case ought to be exhibited. This recklessness in abdominal surgery seems to be the result of the development of the faculty in man that some one has recently termed the abdominal instinct, and which seems to have appeared in this country in the last five or six years. It is an instinct that demands curbing; it is an instinct that occasionally requires a pretty stern rebuke. This rebuke has not yet come, but it will come some day.

In regard to the twelve cases of normal oöphorectomy for general nervous conditions, only a year has elapsed since the operations were performed, and it is entirely premature to draw any conclusions whatever as to the result of the operation on such general nervous conditions. Battey himself places the limit of time before drawing a conclusion at about three years. He says the effect of the operation will last that long. I will not speak of this point further, because it will come up next April when we have the discussion on Tait's operation. In the performance of normal oöphorectomy I think it is obligatory on every abdominal surgeon, before he does the operation, to have a consultation. No physician would think of provoking an abortion without a consultation at which two other competent men were present, and I think the same procedure ought to be followed in the performance of such an heroic operation as normal oöphorectomy.

DR. NEWMAN.—I would like to ask Dr. Byford in regard to the case

that had the morphia habit: To what extent does he consider the morphia habit as contra-indicating such an operation?

DR. BYFORD.—I do not as a rule consider the morphia habit alone as a contra-indication; but alcoholism I do.

I am sorry that Dr. Jaggard regards normal oöphorectomy as such an heroic operation. I hardly think it corresponds with the usual progressive spirit of his remarks upon other subjects. I have never removed the ovaries for a general condition without finding them diseased. I operate for definite indications, and to relieve the patient from results that would destroy her powers to such an extent that she would be a lifelong misery to herself and a useless member of society.

DR. MARTIN.—In opening the abdominal cavity in case of indication for normal oöphorectomy, if you should find the ovaries perfectly normal, as well as the tubes, would you remove them?

DR. BYFORD.—I might, and for this reason: I should not thus open the abdominal cavity unless I had either diagnosed ovarian disease, or there were symptoms showing that menstruation and ovulation were aggravating or causing trouble elsewhere, and that they must be stopped in order to enable me to cure the patient. We do not operate to cure the disease of an organ; we operate to relieve the system of the baneful effects produced upon it by that organ. The question is not whether the organ is palpably diseased or not, but would its removal do away with an obstacle to the patient's recovery. We would remove normal ovaries for dangerous, recurrent, otherwise incurable uterine hemorrhage for fibroids, uterine hyperemia, epileptic attacks with the menstrual function as an exciting cause, and the like. Fortunately the operation is quite safe when the ovaries are removed for general conditions only, for there are then seldom any adhesions—they ought all to recover, as I already have said in my report. More danger lies in the condition for which we operate.

DR. JAGGARD.—If the gentleman will permit an interruption, I do not mean the mere mechanical details of the operation; I mean unsexing the woman, the mutilation of her body, the making of a different individual of her.

DR. BYFORD.—The ovaries are for the purpose of reproduction, and after the sexual system of a woman is modified by the change of life or removal of the ovaries, she is in as good or better condition than before to live out her days. I have not yet learned that a woman is unsexed by the change of life, whether natural or artificial. The cry that we are depriving woman of her God-given organs is nonsensical. Nature herself removes them practically when they are of no more use. When I learn how many women drag out a miserable existence and die for want of an operation or because of delayed operation, I am compelled to believe that conservatism, with all its fine words, causes more misery and death than all of the reckless abdominal surgery.

With regard to the indication for removing the fibroid uterus, I stated my reason, and I have nothing further to say about that except that I do not see the great amount of heroic or reckless surgery involved in it that Dr. Jaggard does. In my opinion, to wait until the worst trouble has occurred is bad surgery.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF LONDON.

Wednesday, March 5th, 1890.

A. L. GALABIN, M.D., *President, in the Chair.*

THE CHANGE IN SIZE OF THE CHEST AND ABDOMEN DURING THE LYING-IN PERIOD, AND THE EFFECT OF THE BINDER UPON THEM.

DR. ERNEST HERMAN read a paper on this subject, of which the following is an abstract:

There are three reasons commonly given, by medical men or by the public, for the use of the "binder" during the lying-in period: (1) That it gives comfort. (2) That it counteracts the injurious effects of the sudden lowering of the intra-abdominal pressure consequent on the evacuation of the uterus. The author points out that it is not usually applied till after the time at which the lowering of pressure takes place. (3) That it keeps the waist measurement small, and so preserves the "figure" of the patient. To judge of this it is necessary to know what changes normally take place in the lying-in period. He adduces measurements made at the General Lying-in Hospital which show that during the first ten days of the lying-in the circumference of the lower part of the chest (at the level of the ensiform cartilage, and also midway between this point and the umbilicus) diminishes by rather more than an inch. This diminution is practically the same in primiparæ and multiparæ, and is not modified by age. The effect of the "binder" is ascertained by comparing different classes of patients: (1) with a binder as ordinarily applied; (2) without a binder; (3) with a binder to the continued tightness of which special attention was given. It was found that the diminution in size of the lower part of the chest is practically the same in each class. The author therefore concludes that the ordinary binder has no effect on the waist measurement of the patient; although he does not doubt that by the use of an unyielding bandage, tightened by straps, deformity of the chest might be produced and maintained. The sole utility of the ordinary binder is as a means of comfort to the patient.

DR. GERVIS said he had not found that patients wished for a belt from any idea that it would influence the size of the waist, but for the support it gave to the lower abdomen and its effect in checking any tendency to undue fullness there afterwards. He thought also that if the belt were adjusted at the beginning of labor, and tightened from time to time during its progress, it had a distinct influence in promoting uterine action and lessening any tendency to subsequent hemorrhage.

DR. CHAMPNEYS said that the method of binding in use at the York Road Hospital was that described by Dr. Matthews Duncan, and was most efficient and simple. He considered that the non-use of the binder led occa-

sionally to the "pendulous belly," with all its ill consequences. The binder assists also in promoting the involution of the soft parts. He thought a binder should not extend so high as to compress the hypochondria. Binders were not used in Germany, and in his experience English hospital patients recovered with better figures than German women, while private patients who had experienced English and German customs preferred the former. He agreed that the binder did not prevent flooding.

DR. BRAXTON HICKS said it was clear that the base of the thorax was expanded by the pregnant uterus. This being so, the abdominal walls after delivery were unable, by so much as they were elevated, to apply their pressure on the abdominal contents. Blood, therefore, flowed into the abdominal cavity, and was ready to flow into the uterine cavity should the walls of this organ become atonic. He thought that if the thorax were brought to its natural size by a slight bandage it would be beneficial.

MR. ALBAN DORAN remarked that at different periods different interpretations had been put upon the term "waist," but that it was the unsightly enlargement of the abdomen that women objected to, because it suggested mature years and gave rise to much physical discomfort.

DR. HERMAN, in reply, said that his statements only applied to the binder in ordinary use, put on, as was usual, after labor, and not to the abdominal bandage as an adjuvant to labor. By "waist" he understood the smallest circumference of the trunk. Women were discharged from German lying-in hospitals sooner than they were in this country, which might account for the more frequent condition of pendulous belly. He could have understood the effect of a belt, worn after the patient got up, in preventing "pendulous belly," but that was not here under consideration. He thought the comfort a binder gave was a sufficient reason for using it. But it was not necessary, was not a safeguard against any subsequent trouble, and he thought that medical men might be guided as to its use entirely by the wishes of their patients.

APOPLEXY OF THE OVARY; CYSTIC DILATATION WITHOUT RUPTURE.

MR. ALBAN DORAN reported the case of a patient who was 34 years old and had borne eight children. The abdomen was unusually distended during her seventh pregnancy (1886). It remained large till the conclusion, at term, of her eighth pregnancy in the summer of 1888. The abdominal distention continued. In April, 1889, she was suddenly attacked with severe pain over the right side of the abdomen. Four weeks later the abdomen was found distended by a globose, elastic, and freely movable tumor, which pressed downward into Douglas' pouch. Early in September the tumor suddenly diminished in size, sinking into the pelvis. On October 23d Mr. Knowsley Thornton operated. The tumor was removed; it proved to be the right ovary converted into an oval body two and one-half inches in its longest diameter, and with an irregular surface of a uniform dull drab color. The uterus and left ovary, the abdominal viscera, and the peritoneum showed no signs of disease, old or recent. The ovary formed a cyst filled with a yellow mass, which was found to be old clot. A large, well-formed corpus luteum opened out into the cavity containing the clot. The cyst wall, one-eighth of an inch thick, consisted of normal ovarian tissue bearing a few follicles. The patient made a good recovery. The attack of pain in April, 1889, probably represented the rupture of a mature follicle into the stroma. The ovary then gradually distended till the hemorrhage ceased, and diminished in bulk as the clot contracted.

The varieties of apoplexy of the ovary are described. This case is an example, not of hemorrhage confined to the cavity of a dilated follicle, nor of

hemorrhage originating in the stroma, but of hemorrhage into the stroma through rupture of a follicle.

DR. AMAND ROUTH said that he could not agree with Mr. Doran's explanation of the case, because in May the tumor was a palpable cyst extending from Douglas' pouch as high as the level of the umbilicus, and in September it burst, and in the early part of October it was only the size of a small orange. Hence he believed it to have been an ovarian or broad-ligament cyst, and that the changes described by Mr. Doran had taken place subsequent to the bursting.

DR. P. HORROCKS considered apoplexy a good name, although not defensible etymologically; but in adopting it one should make it quite analogous to its meaning when applied elsewhere. He thought that hemorrhages into Graafian follicles and into the stroma of the ovary were not so uncommon as one might have supposed from post mortem research only.

DR. CULLINGWORTH preferred the term *hematoma* to *apoplexy*. He thought the history was one of rupture rather than of gradual absorption. The fluid poured out might easily have been absorbed, leaving no trace behind. He described a case in his own practice in which an ovary had been removed by abdominal section; it was wrapped up in, and adherent to, the omentum, and was a mere shell filled with dark brown, pulsatous material, evidently altered blood.

MR. ALBAN DORAN, in reply, said that small extravasations of blood into the follicles and substance of the ovaries were probably frequent. The big swellings full of blood often seen on the surface of the ovaries of healthy young subjects were probably normal. He considered the absence of signs of rupture in the peritoneal cavity conclusive against recent rupture. Extravasations of fluid into the substance of the ovary, inflammatory or otherwise, caused great pain, as in orchitis and intra-ocular inflammation where organs with tough capsules were involved. He thought Dr. Cullingworth's case similar to one he had published in the *Medico-Chir. Trans.* for 1885. The walls of the ovary exhibited by him (Mr. Doran) were solid ovarian tissue; they bore no resemblance to the walls of a true cystoma which had partly collapsed, as in Dr. Duncan's case.

Wednesday, April 2d, 1890.

A. L. GALABIN, M.D., *President, in the Chair.*

The following specimens were exhibited: Living Female Child with Three Lower Limbs (Dr. Godson). Congenital Hernia (Dr. Spencer). Drawing of Central Choroido-retinal Disease (Dr. Macnaughton Jones). Uterus after Porro's Operation, and a Child from a case of Extra-uterine Fætation (Dr. Cullingworth). Cancer of the Uterus (Drs. Galabin, Lewers, Herman, Dakin, and Cullingworth).

FOUR CASES OF VAGINAL HYSTERECTOMY.

DR. CULLINGWORTH read a paper on this subject.

Four cases of total extirpation of the uterus per vaginam were related, two of columnar-celled carcinoma of the cervix, and two of squamous-celled carcinoma of the portio vaginalis. In three of the cases the patients recovered from the operation; one showed recurrence in eight months. The disease had extended into the body of the uterus in both the cases of cervical carcinoma, and the author expresses a doubt whether the tissues above the internal os are respected as frequently as is alleged. Museum specimens are shown where the corpus uteri has been more or less invaded.

In the fatal case the patient had a parovarian cyst situated behind the

uterus; this was removed by abdominal section on the same day that the vaginal hysterectomy was performed. Death occurred on the third day, apparently from intestinal paralysis.

The paper concludes with some remarks on the diminished mortality of the operation as compared with what it was when Dr. W. Duncan's paper was read in 1885.

DR. JOHN WILLIAMS said two things must be considered: 1st, the direction of growth of cancer when it begins in the cervix, and, 2d, the difference in the results obtained after total extirpation of the uterus and supravaginal amputation of the cervix.

Regarding the direction of growth of cancer of the cervix, it had been maintained that its tendency was to spread outward toward the parametric tissue, and that it invaded the body of the uterus only in advanced cases. The specimens shown by Dr. Cullingworth went to show that cancer of the cervix had a tendency to grow outward and invaded the body of the uterus in the later stages only. The results obtained after total extirpation supported the same view. After supravaginal amputation recurrence took place, not in the stump of the uterus left, but in the cellular tissue around (the exceptions to this were rare), and after total extirpation it occurred, of course, in the same place, and, if statistics of the same period be taken, far more frequently. This might be due to the fact that total extirpation had been performed for the severer cases. He (Dr. Williams) did not think that total extirpation presented any advantages over supravaginal amputation.

DR. WILLIAM DUNCAN agreed with Dr. John Williams that cancer of the cervix spread laterally, and only invaded the body of the uterus in the later stages. Since 1885 he had carefully examined every case of cancer of the uterus he had met with, and in only three could he satisfy himself that the parametric tissue was unaffected and a radical operation advisable. He recommended careful examination of the utero-sacral ligaments per rectum. He asked if this had been done in Dr. Cullingworth's cases. He regarded foreign statistics as practically valueless, inasmuch as total extirpation was performed for other conditions than cancer. He maintained that in the few cases where any radical operation was called for, the supravaginal amputation was the one to be preferred.

DR. SINCLAIR referred to the fact that the minor operation had been almost unanimously abandoned by the German operators, as a point in favor of total extirpation. As the operations were performed almost entirely in the public hospitals, the German reports must be considered fully as reliable as any published. Total extirpation for cancer of the body of the uterus or for cancer of the portio vaginalis gave comparatively good results, owing, perhaps, to the fact that a clean sweep was made of all the affected tissue at a considerable distance anatomically, if not physiologically, from the disease. Cancer originating in the cervical canal was liable to remain concealed for a longer time than in the body, where it caused pain and discharge, or in the point of the vaginal portion, where it produced a typical hemorrhage. If the cancer was to spread, it must do so in the parametric structures; but the rule was that the spreading occurred comparatively late in the process of disease, and thus the exceptions in which the disease spread up and down to an extent which could only be ascertained *post operationem* were so numerous that the only safe rule was to perform the major operation as early as possible. The operation was called major, but it was perhaps less dangerous than some of the so-called minor operations in which the circulation, both hemic and lymphatic, was left comparatively uninterrupted. His own experience amounted to eighteen cases of total extirpation for cancer. Twelve of these had been performed within the last twelve months, and all were alive and well except one patient who died of acute septic peritonitis. He gave details of cases of extirpation over two years ago in which no recurrence had taken place and the patients remained in very good health.

REVIEWS.

A NEW MEDICAL DICTIONARY. Including all the Words and Phrases used in Medicine, with their proper Pronunciation and Definition, based on Recent Medical Literature. By GEORGE M. GOULD, B.A., M.D., Ophthalmic Surgeon to the Philadelphia Hospital, etc. With Tables of the Bacilli, Micrococci, Leucomaines, Ptomaines, etc., of the Arteries, Muscles, Nerves, Ganglia, and Plexuses; Mineral Springs of U. S.; Vital Statistics, etc. Small octavo, 520 pages. Philadelphia: P. Blakiston, Son & Co.

While this work does not include *all* the words and phrases used in medicine, and cannot take the place of the "unabridged" lexicons, it is the best small medical dictionary that we have seen. Its arrangement is compact; its definitions, as a rule, clear and concise; its tables, particularly of prefixes and suffixes, complete and valuable. The typographical work is good and the binding strong and neat.

One important feature which we regret to see omitted is that of specific directions for pronunciation, the position of the accent only being given.

MAY'S DISEASES OF WOMEN. *Second Edition.* Revised by LEONARD S. RAU, M.D., Attending Gynecologist to Harlem Hospital, etc. Pp. 365; 31 Illustrations. Small octavo. Philadelphia: Lea Brothers & Co., 1890.

This work is a systematic compilation from various authorities intended to aid the student or practitioner who wishes to refresh his memory rapidly but has not the time to consult larger works. In preparing this edition the whole work has been brought up to date, and several of the chapters practically rewritten, without, however, diverging from the original plan or increasing materially the size of the work.

ABSTRACTS.

1. Glavecke: Physical and Psychical Changes in the Female after Ovariectomy and Extirpation of the Uterus (*Arch. f. Gyn.*, xxxv., 1).—After describing his views of the physiology of ovulation and menstruation, the author considers the changes which result when these functions are artificially repressed; 44 cases were utilized for purpose of observation. The most immediate and important consequence of castration would be the instant cessation of the menses. With regard to this point, of 41 cases operated upon the menopause ensued at once in 27, in 9 somewhat later, and remained absent altogether in 5; of the 9 cases in which the onset of the menopause was somewhat postponed, the menses recurred but once in 5, and in the remaining four, 2, 3, 4, and 14 times respectively. In 4 of the 5 cases in which menstruation was not at all affected by the operation, the probability of the retention of portions of ovarian tissue was very emphatically indicated. Hegar has noted that the smallest shred of ovary remaining in the body would suffice to continue the menstrual function; in the fifth case a small exudate existed in the left para-

metrium, which the author considered as the source of the menstrual flow. It is believed that the nerve irritation for menstruation may also come from an exudate which occupies the site of an absent ovary. These five cases, therefore, do not alter the fact that extirpation of the ovaries induces the onset of the climacteric. The table given shows that in eighty-eight per cent this result took place at once or after a varying interval, while only in twelve per cent was non-success noted. The experiences of Hegar, Wiedow, Tissier, and Schmalfus were similar to the author's, while the opposite have been noted in literature by Goodman, Peaslee, Ormières, etc. According to the theory of G., menstruation should cease after ovariectomy; should it continue, it may be due to portions of ovary being left behind, or to the existence of a supernumerary organ, or to exudates occupying the site of the removed glands; in addition, submucous or interstitial myomata may be present which project into the uterine cavity and thereby cause bleeding; or, finally, a pathological condition of the uterus or its mucous membrane may in time lead to bloody discharges which are regarded as menstrual.

Vicarious bleeding took place in two of the author's cases; in one, moderate epistaxis took place two or three times after operation; in the other there were suspicions of gastric ulcer. The bleedings occurred at the time of the usual menses. Sauffer and Schmalfus each report a similar case. In all four the hemorrhage was so moderate as to divest the occurrence of any practical significance. Molimina occurred in fifty per cent of G.'s cases; they consisted of pains in the back and abdomen, headache, meteorisms, nausea, and copious leucorrhœa; a greater percentage is reported by other observers; in two cases a menstrual exanthema occurred. In most cases the molimina took place in the first months after operation, to gradually disappear; their duration varied from a month or two to almost a year. They may be explained in part by the cumulative action of the ovarian excitant upon the cerebral centres, which is capable of continuing its action for some time after removal of the source.

The vagina is the site of varying changes after castration. In general, diffuse hyperemia of the mucous membrane follows, sometimes attaining a degree closely resembling that found in beginning pregnancy; frequently copious secretion is combined with this state. In three out of nineteen cases the author failed to note this hyperemic change; he thinks that such may be explained by the fact that the vagina in some cases at once undergoes atrophy without the intervention of the hyperemic stage. In the atrophic stage the vagina becomes shorter and considerably narrower, generally, however, allowing of the passage of two fingers. The atrophy takes place much more rapidly than in the physiological climacteric. The atrophy did not in general implicate the labia majora and minora and the mons veneris.

The cervix uteri undergoes a slow shrinkage in texture and volume; it becomes more slender and tenderer, a little shorter. If ectropion existed, it rapidly disappears, erosions and ulcers at the lips heal readily, cervical catarrh rapidly diminishes and disappears without further local treatment.

The uterus after castration undergoes a slow but steady atrophy, and to a greater degree than the other genitalia; it matters not whether it be enlarged by tumors or chronic inflammation, or is of normal size. The process begins promptly after castration. The atrophy cannot be explained upon the ground of simple mechanical circulatory disturbance; the uterine artery does not shrivel at the climacteric, nor is it tied during the operation for the artificial menopause. Tying of the vasa spermatica will also not explain it; they send but small branches to the uterus, and experiments upon animals also go to prove their negative influence. It may be that the connection between the ovaries and the development and nutrition of the rest of the genital system—in all probability a nervous influence—will account for it.

In the author's experience the diminution in size and final disappearance of myomata of the uterus was observed in all but two cases, corresponding to the results obtained by other operators. As regards the general condi-

tion of nutrition of the patients, in almost all there was an increase in the bodily weight and the deposition of adipose tissue, depending upon temperament. Sexual pleasure, as a rule, while not abolished in all cases, suffered some diminution in the majority. The temperament of those operated upon generally changed to a depressed, sad, and often melancholy disposition.

The physical and mental changes following total extirpation of the uterus are summed up as follows: The menses, without exception, ceased entirely, without the occurrence of vicarious discharges of any consequence. Mollimina menstrualia occurred in all cases early after operation. There was no considerable influence observed upon the remaining genitals. The operation generally had a very favorable influence upon the general health of the subjects, but the same degree of increase in bodily weight and fat—often immoderate—which followed castration was not observed. The sexual appetite was very little influenced. The disposition of the women in half the cases underwent no changes after the operation. In others there was moderate and sometimes severe mental depression. The conclusion to be drawn from G.'s experience is that ovariectomy makes a vastly more profound impression upon the physical and mental *naturel* of the patients than does extirpation of the uterus, to be explained by the more extensive mutilation to which the genital apparatus is subjected.

L. R.

2. Spaeth, F.: Ventral Fixation of the Uterus (*Deutsche med. Wochen.*, 37, 1889).—A pre-existing retrodeviation of the uterus is rendered worse by unilateral castration; we do not here have the aid of a premature climacteric and consequent atrophy and rectification of the offending member which follows removal of the ovaries and tubes on both sides. We are, therefore, justified in placing the uterus in as nearly a normal position as possible when performing laparotomy, and in fixing it there. Fifteen cases are given, occurring in the private clinic of Dr. Prochownick in Hamburg; in each there was retrodeviation of the uterus, with, however, varying pathologico-anatomical causes. In three there was purely mechanical compression of the uterus backward—once by a myoma of the posterior wall of the fundus, once by a dermoid of the right ovary, and once by a polycystoma of the left parovarium; in two cases of non-inflammatory tumors there existed chronic perimetritis, making the etiology somewhat dubious; in five cases inflammatory new growths of the uterine adnexa were present—hydrophysalpinx, pyovarium, hematovarium—in most cases dependent upon antecedent blenorrea, always accompanied by chronic pelvic peritonitis. In four cases new formations in the small pelvis were entirely wanting; they were incarcerated retroflexions, caused by old inflammatory contracting processes, three times in the pelvic peritoneum, once in the pelvic connective tissue. In these four cases the retroflexion was the sole indication for laparotomy; the trouble had incapacitated the patients for many years, after patient resort to more conservative measures had failed to give relief. Of the fifteen cases one died of cerebral embolism; the rest recovered with very great improvement in their respective conditions.

Bladder disturbances occurred in the first days following operation, principally retention; this was, however, always transient. Regarding the results of the operation, in fourteen cases it was apparent that the artificially induced position of the uterus was firmly fixed by adhesions to the abdominal wall. Subsequent conception was not observed in any of the cases, for in five bilateral castration had been performed; in an equal number the tubes and ovaries of one side were removed—among the latter were two women, 38 and 43 years old respectively; in the remaining five cases, in which the uterine adnexa were not removed, the patients advanced in years beyond the child-bearing period. In all cases the subjective symptoms disappeared, not to again molest the patients.

L. R.

3. Fritsch, Heinrich: Sixty Cases of Laparo-myomotomy, with Remarks (*Sammlung klinischer Vorträge*, No. 339).—The indication for operat-

ing is not an absolute but a relative one ; it is not so simple a matter as the removal of ovarian growths. There is no doubt that even large-sized myomata may disappear ; the author has observed four such occurrences ; he employed pills of ergotin and powdered ergot, with good results, but has seen them fail in other instances. Of course it remains an open question how much influence the climacteric may have had with the disappearance of the growths ; in a case of his own and some reported by others the use of ergot was followed by the death and expulsion of the myoma. He recommends that not too much confidence be placed upon ergotin, and certain precautions are even necessary. It should be used only where the growths are small and capable of passing through the vagina. Large growths call for operation, but when the hemorrhage is great he uses the drug despite the size of the tumors, taking the precaution to diminish the dose when the pains become excessive. As a matter of fact, hemorrhage does not regularly appear with large growths ; if it does it is secondary to inflammation of the uterine mucosa. One should be very cautious about operating in cases attended with profuse menorrhagia ; the most conservative measure will be to castrate and thereby remove the menorrhagia.

First among the special indications, in youthful subjects, is the absolute size ; a growth appearing between the twentieth and thirtieth years, and already the size of the uterus in the sixth month of pregnancy, will certainly continue to grow. To operate late means to operate under unfavorable auspices ; if the growth is large, but occurs in a subject of more advanced years, the relationship is somewhat changed. If no larger than about a man's head, the patient may carry the tumor and live ; the growth itself has no influence upon the general health.

Why is the prognosis graver than in ovariectomy? F. believes the entrance of air into the peritoneal cavity to be one of the causes. A small amount of air would not contain sufficient germs to be of any moment in the ordinary condition of the peritoneum, and larger quantities are generally capable of resorption ; but in the cases under consideration the peritoneal surface is not generally in a good condition for resorbing. In addition, there is the effect of the drying of the serosa in the air ; the absence of the pressure of the abdominal coverings and the intestinal hyperemia caused thereby, the trauma of the operating hand and the sponges, which tend to disturb peritoneal function, cause vascular injection and paresis of the intestinal muscular coat ; certain disinfectants, when too strong or unsuitable, too hot or too cool, may operate in a similar manner ; different fluids gravitate to the cul-de-sac of Douglas, in close contact with the large sutured wound in the uterus ; through this channel also germs may gain access to the field of operation. The author tabulates his sixty cases—sixteen of which died—and gives detailed and interesting descriptions of the operative measures adopted, with valuable arguments *pro* and *con*, various modifications and technicalities.

L. ROSENBERG.

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ORIGINAL COMMUNICATIONS.

RECTOCELE, ITS CAUSE AND CURE; DEVELOPMENT OF THE
OPERATION AT THE WOMAN'S HOSPITAL.¹

BY

THOS. ADDIS EMMET, M.D.,

Surgeon to the Woman's Hospital, New York.

THE condition is one due to an injury sustained in childbirth, which becomes exaggerated as a woman passes the menopause and as the vagina is shortened in after-life.

It has been taught that the lesion results from a laceration of the perineum, but this is not strictly correct. It does follow, however, directly from the loss of the support which the perineal body exerts when the muscles forming it are in their proper relation to each other. For a number of years I have held that the chief purpose of the perineal body was to support the sigmoid curve of the rectum, and to aid thus in the act of defecation by preventing an encroachment under any circumstances upon the vaginal canal. The perineal body when intact is also indirectly instrumental in giving the proper support to the blood vessels of the pelvis through its connections with pelvic fascia and connective tissue. The vaginal

¹ Read before the New York Obstetrical Society, May 6th, 1890.

walls lie in close contact so long as the levator ani muscles are in position, and are kept in somewhat close approximation by the fascial sheath which invests the muscular diaphragm at the vaginal outlet. It would be more explicit, however, to state that the anterior or upper wall of the vagina is essentially fixed, from its connection with the fascia about the superior strait, and that the posterior surface is the one which is movable and kept in contact with the anterior portion of the canal. For the purpose of illustration a comparison might be made with the mouth, where the upper portion, or jaw, is also fixed, and for egress or entrance it is necessary that a sufficient retraction of the lower jaw should take place. This is likewise the case with the vagina, where to open the canal it is as necessary that the posterior surface should be retracted towards the coccyx. When in a state of integrity the vaginal canal is flattened on itself, as it were, so that there exist but the anterior and posterior walls. This approximation is brought about by the lateral attachment of the pelvic connective tissue and fascia along the surface at the vaginal sulci, by which the posterior wall is lifted.

One of these sulci, as we know, extends the length of the vagina on each side. The fascia forming these sulci is continued in a reflexion over the muscles from the vaginal junction, or rather from just where the canal penetrates the muscular diaphragm at the pelvic outlet, and as a sheath it invests these muscles, both behind and in front, so as to bind them firmly together. Then, to repeat, so long as this fascial reflexion remains intact and no other agent is at work, the two sides of the vagina must be kept in close contact through the elasticity of these sulci.

Voluntary muscular action can be exerted on this fascia so that portions of the vaginal canal may be made to grasp the finger with the force of a sphincter. As a reflex symptom we have the involuntary action which is termed vaginismus, and a palliation of the symptoms by surgical means is gained only by a division of this fascia in the angles where it is reflected from the sulci to the muscles, and where it is torn as a consequence of child-bearing.

I believe where instruments have not been used, and the perineum is said to have been lacerated, that the fourchette

is seldom injured and that no portion of the perineal body itself is torn. When the perineum is torn during the progress of a natural labor, I am satisfied that the laceration extends from behind forward through into the rectum, and from below upward, thus dividing the sphincter ani and perineum. On the other hand, when the delivery is terminated by the use of forceps, much or little of the perineum can be and is lacerated, but the injury then begins in the fourchette and extends downward and backward in the median line. Under ordinary circumstances, however, the patulous condition of the outlet, which is generally attributed to a supposed laceration of the perineum, is the direct result of more or less separation of the pelvic fascia where it is reflected on to the muscles. If we examine a woman on the back who has sustained this injury, and do so by introducing the index finger of the left hand into the rectum, to lift the recto-vaginal septum, and with the thumb and third finger then separate the labia, a transverse cicatricial line, of more or less extent, will be distinctly seen on the posterior wall and just within the vagina. The tear may have extended deep into the tissues forming the angles at the sides of the vagina, where the sulci seem to terminate, and to more or less depth across the entrance of the canal. In other instances the separation of the fascia at this point seems to take place without causing any external tear on the vaginal surface, and yet the entrance to the vagina will be left as patulous as the mouth of a bag from which the running-string has been removed. As soon as this injury occurs in the progress of labor, there being no longer any resistance, the child is expelled almost with a single pain. The rapidity with which the latter part of the labor is terminated, under the circumstances, stands out as a prominent feature in the history of these cases.

With the loss of the force which the fascia exerted the muscles are no longer held in firm relation and other forces at once come into play. The transversus perinæi muscles are attached lower down and behind to the tuber ischii on one side, and also along the outer border of the levator ani muscles on the other side. So soon as the power which kept the levator muscles in close approximation, and as part of the perineal body, becomes lost, the counter force, exercised chiefly by the

transversus perinaei muscles, could have no other action but to draw the levators apart as two curtains would be separated. The secondary effect is to be attributed chiefly to the loss of support for the blood vessels from the retraction of the pelvic fascia after it has been separated.

This fascia is also attached to the rectum and affords a very important support to that canal. When this support has been lost and the fascia retracts, the anus and surrounding tissues are then drawn backward and nearer to the coccyx, and this has the effect of rolling out the surfaces forming the vaginal outlet. The sulci are also displaced in proportion to the degree of fascial separation, and with their action, now exerted in a different direction, the vaginal eversion becomes still more exaggerated. Instead of these sulci being found on the same plane with the urethra, as they were so long as the pelvic fascia and its attachments were intact, they are now brought into full view for a greater portion of their course, and lie an inch or more nearer to the hollow of the sacrum.

Under the circumstances I have described, and with the support to the rectal walls impaired, the sigmoid curve must naturally become greatly increased in the direction of the least resistance, so as to encroach upon the vaginal canal and thus form what is termed rectocele.

This condition may exist for years before middle life, with comparatively little inconvenience beyond the difficulty of emptying the rectum, and even this becomes greatly lessened when the woman learns, as if by instinct, to support with her fingers the recto-vaginal surface during defecation. But as she advances in life and the vagina shortens, the rectum is emptied with greater difficulty, and the woman finds herself less and less able to be in the upright position without a sense of weight and bearing down. The uterus gradually becomes retroverted as the posterior cul-de-sac disappears, and in time the degree of prolapse may end in complete procidentia.

The true connection, in this sequence, between cause and effect has not been fully understood in the past. Procidentia and retroversion do not take place under the circumstances unless the cervix was lacerated. This injury, however, generally co-exists as a consequence of the same force which caused the damage to the vaginal outlet. A laceration of the

cervix arrests involution, thus leaving the uterus too large and with a certain degree of prolapse from the increased weight which must always exist as a natural consequence. But without some other complication, retroversion is not the rule until the posterior cul-de-sac of the vagina disappears and the vagina shortens with the usual changes preparatory to the menopause.

It has been held that retroversion of the uterus, with an existing rectocele, results from a want of support from below. But this is not true; for the uterus, with its appendages, and the vagina are suspended from above and by lateral attachments, as is every other organ in the body, and receives no support directly from below. This is the fallacious teaching regarding the uses of the perineum.

The sense of bearing down and of great weight about the pelvis which is complained of under the circumstances I have presented, is due more or less to an obstructed venous circulation brought about when the vagina becomes shorter and more patulous.

The vaginal outlet is opened by retracting the posterior surface towards the coccyx, and to the same degree will the pelvic fascia become relaxed or slackened up. Let us assume that the uterus occupies the centre of the superior strait, and that while the two sides of the vagina are naturally in contact two inches and a half is the usual radial distance from the uterus to the urethra.

If we were to place a woman in this condition on the left side and introduce a Sims' speculum, then to the same extent as the perineum was thereby retracted towards the coccyx would we lessen the radial distance between the fourchette and the cervix, and this lessened distance is at least an inch and generally more. We thus shorten the sulci, and must relax to the same extent the pelvic fascia and connective tissue connected with them, and the relaxed vagina then becomes ballooned out by atmospheric pressure. This is the explanation in the use of Sims' speculum.

I have elsewhere pointed out the peculiarity of the pelvic circulation, where the vessels obtain, more than in any other part of the body, their direct support from the connective tissue, and where the veins, being without valves, must needs take

a most tortuous course to meet the changes attending pregnancy and to overcome the action of gravity. I have also shown that the circulation becomes increased as the veins are straightened out from their tortuous course, as must occur with a prolapse of an enlarged uterus to the floor of the pelvis, or from the upward traction attending pregnancy and the growth of tumors. The limit is reached as the uterus escapes from the vagina, and when with sufficient upward traction the arteries are put on the stretch; the pelvic circulation becoming diminished in proportion as the diameter of the arteries becomes lessened by the stretching.

When the separation of the pelvic fascia at the vaginal outlet has been sufficient to allow of the formation of a rectocele and retroversion, the increased hypertrophy and prolapse of the uterus which may follow are due to a loss of support to the pelvic veins, whose circulation becomes augmented with the increase of uterine weight and the degree of prolapse.

I have seemingly digressed from the subject of rectocele, but we will soon realize that all means employed to repair the injury must fail unless the separated fascia can be brought again into proper relation and the needed support restored to the pelvic vessels.

Let us consider for a moment another point in this relation, and we will then enter upon the mode of treatment by surgical means.

The function of the levator ani muscles, and of the neighboring tissues acting in accord, is to lift the anus, perineum, and surrounding tissues up towards the arch of the pubes. By this action the posterior wall of the vagina becomes more concave and is brought into closer relation with the anterior one. The same muscular action draws the tissues in the neighborhood of the fourchette somewhat forward, with the effect of making traction on the vaginal sulci, and indirectly of putting the fascia and connective tissue of the pelvis on the stretch. Just in proportion, then, as this muscular action is exerted will tone be given to the pelvic vessels, and when exaggerated the veins are compressed sufficiently to put the pelvic tissues in a state of erection. When the relation of these muscles has been impaired so that they can no longer act upon the pelvic blood vessels, the woman who has suffered from the injury

sustains an equal loss of desire, or gratification, by absence of the power to put the tissues in a state of erection.

From what has been stated we may draw the deduction as to what must be accomplished by any procedure resorted to for the relief of a rectocele, and I must include the repair of the vaginal outlet, as a supposed laceration of the perineum, since both lesions are but different degrees of the same injury and must be repaired at the same time. Such an operation must lift the anus and surrounding tissues upward and forward, and in doing so the everted surfaces at the vaginal outlet will be rolled in and the levator ani muscles will be brought together, and at the same time the convex surface of the posterior wall of the vagina will be changed to a concavity. As the tissues are lifted and drawn forward the two walls of the vagina will be brought into contact, and as traction is exerted on the sulci they return to a position where the needed support can be brought to bear on the pelvic vessels. No means has yet been devised which can restore to the levator ani muscles the full action exerted by them before the injury. This is due to the fact that in every instance of injury a greater or less portion of these muscles is torn from their attachment along the edge of the rami—a condition which Nature seems unable to fully repair, and it still remains beyond the reach of surgical art. It is, however, a rare exception when a fair approximation cannot be gained, and the failure is, as a rule, due to a want of appreciation as to the extent of the injury and as to what must be accomplished by the operation in each individual case.

In the March number of the *AMERICAN JOURNAL OF OBSTETRICS* for 1890 will be found an article by the editor, Dr. Mundé, on "The Best Operation for Cystocele and Rectocele," and facing page 272 is an excellent plate showing "Stoltz's operation" for the one condition and "Hegar's operation" for the other.

If my friend, the author, were as familiar with what has been done at the Woman's Hospital as he doubtless is with the work done abroad, he would not seek a foreign sponsor for either operation. He would realize, moreover, that it would be difficult to point out any resource in the plastic surgery of women, from "Hegar's operation" to the flap-splitting procedure of Tait, which, from force of circumstances, had not

been devised at the Woman's Hospital and fully tried long before this branch of surgery had attracted any special attention abroad.

I have personally the fullest appreciation of what has been done by our foreign confrères, but in justice to ourselves we must not lose sight of what has been done even here in this city, nor forget the fact that plastic surgery of the female genital organs was of American birth. And this offspring had reached a sufficient degree of development before it went abroad to revolutionize the practice of the world, and it did soon render obsolete, with all thinking men, the methods then in vogue. It is true that much of the teaching has come back to us like old wine in new bottles, for until within comparatively a few years there existed, both in England and on the Continent, a disposition to render us but scant justice, and not infrequently the source of inspiration seems to have been forgotten even for work of the present day and in our own land.

To Dr. J. Marion Sims, the most ingenious of all plastic surgeons, is due the credit of devising the two operations described in Dr. Mundé's paper.

I must dismiss the operation for cystocele as briefly as possible, since the subject does not come within the true scope of this paper.

About the year 1856 I assisted Dr. Sims in an operation where he removed a large portion of a cystocele and drew up the edges of the wound together in the centre. While I am under the impression that on several occasions he brought the edges together with a silver wire introduced as a running-string, his usual practice was to do so by means of half a dozen or more radiating silver sutures which crossed from one side to the other at a common centre. This method brought the edges up as well as the single suture could do, and without the risk of strangulation. The device was an ingenious one, but inapplicable in a canal like the vagina, with a length much greater than the width. As only the edges of a circular surface can be brought up properly by this method, it is evident that while the excess of tissue in the transverse diameter was removed, that in the long diameter was but partially disposed of. The operation never accomplished more than to lessen

for a time the degree of prolapse, leaving always more or less of a convex surface presenting; and if the cystocele was not reproduced, as was the rule, the patient's future condition was certainly not improved.

I can recall one instance after this operation where the woman had more or less incontinence as a consequence of the traction which dragged the urethra backward. Several, I recollect, suffered, after the operation, for the first time from irritability of the bladder, but what became of them afterwards I do not know. Two of the cases, one of which was the first woman operated on, subsequently died of kidney disease, which was attributed to the pressure exerted by the crowding of the tissues upward, so as to impede the flow of urine into the bladder, with consequent dilatation of the ureters.

Between the years 1855 and 1861 I must have assisted Dr. Sims at least fifty times to turn in a rectocele along the median line by the method attributed to Hegar, and I operated myself frequently during the same period.

The operation was sometimes performed alone, and at a subsequent time Baker Brown's device for obstructing the vaginal outlet would be added, with the object of gaining an additional support; but as a rule the two operations were done at the same sitting.

One of the first principles established by Dr. Sims, from observation, was that the best results were obtained, after these operations on the vaginal walls, when only a sufficiently broad strip of denuded tissue was united, instead of removing and bringing together all the intervening surface. The fact was early recognized by myself that in a large, dilated vagina there was no new tissue developed, but that the parts were over-stretched and had not retracted because involution had been arrested. It was proved that as involution took place after the operation, the cavity then left gradually disappeared and the vaginal walls returned to their natural thickness, with lessened weight and without having their elasticity destroyed.

It was, moreover, proved that the perfection of plastic surgery had been attained when the natural elasticity from the pelvic fascia and connective tissue could be regained by art for the support of the parts. It is certainly a fallacy to suppose that any continued support can ever be gained as a

prop by simply bringing a mass of tissue together. At some point, outside of the line, the misdirected but no less persistent traction exerted by the connective tissue will be brought into action as an exciter of the absorbents, and gradually the line will disappear and with it the artificial support. This proves sometimes a happy provision of Nature to overcome the effects of bad surgery where the proper circulation has been interfered with, and this difficulty is often the least of the evil consequences which may result from crowding a mass of tissue together.

The mode of operating was to place the woman on the back, with the limbs flexed on the abdomen. The uterus was then anteverted, if necessary, and the cervix was pressed into the posterior cul-de-sac of the vagina by means of a sponge probang which was held by the hand of an assistant. With a sound properly bent the excess of prolapsing tissue forming the rectocele was turned in towards the rectum by sufficient pressure exerted in the median line. While the sound was thus held by an assistant the operator proceeded to indicate the course of the strip which had to be denuded. This was done by removing small portions of the vaginal mucous membrane, which was caught up with a tenaculum for the purpose at intervals along each side of the line formed by the rolling-in of the rectocele. Sometimes the same outline was gained by the use of a moistened stick of nitrate of silver on the day before the operation, which was drawn along on the vaginal surface between the folds. When the parts were allowed to roll out again, the surface which was to be turned in, and which would retract, was then clearly defined in the shape of a long oval. The denuded surfaces were brought together in the median line, and sometimes by a continuous suture; but interrupted ones of silver were found to be best fitted for the purpose, as the union of a broader surface could be obtained by their use when properly applied.

Dr. Sims at first used the knife, but I preferred the scissors, as I could work with more rapidity and with less loss of blood. A pair of scissors in the pocket case, for cutting ligatures and for preparing dressings, was about the only use for the instrument in surgery at that time. I may claim to have introduced the scissors for general use in gynecological surgery, and to

have thus revolutionized entirely the mode of operating. And, with the exception of some supposed improvements which have been made by the instrument-makers, I believe that I devised all the different patterns which are in use to-day.

When the rectocele had been turned in and secured from above to the vaginal outlet, it was then customary to do Baker Brown's operation in addition. This was a separate procedure entirely, and consisted in uniting a surface in advance of the vaginal junction and one which was confined to the sides of the labia. In the zeal for doing the operation thoroughly, many succeeded in forming a troublesome obstruction at the vaginal outlet, and I have known of instances where, in emptying the bladder, no urine could escape externally until the vagina had been filled. It proved, however, a profitable operation for the profession, as often other surgeons had to be employed to remove the obstruction to sexual intercourse.

I doubt if any one within sound of my voice has the slightest realization of what a frightful operation the closing of a supposed laceration of the perineum was forty years ago, or of the suffering the poor woman was then subjected to. An anæsthetic was rarely given, if ever, and the woman had to be held by brute force or tied down to the table, while the process of denudation with a knife was very tedious and the loss of blood great. Then three or four double ligatures of good-sized twine, well waxed, were carried through each labium by means of an instrument as large as a mattress needle. Two quill sutures were used, which were about two and one-half to three inches in length, and somewhat smaller than a wooden lead pencil. A quill was placed in the loops of twine on one side, and as the parts were drawn up tight together the ligatures were tied over the quill against the other labium. The suffering was increased as the parts became edematous, and this was sufficient soon to displace one end or the other of the quill sutures, which began then to cut into the tissues. To relieve this swelling free incisions were often made, labial abscesses were common, erysipelas was not infrequent, and I can recall a case where both labia sloughed off. Dr. Sims was the first to simplify this operation, and he did so, in the beginning of his experience, by removing the great source of irritation, the quill suture, and using nothing but the interrupted silver

wire, which was attended with comparatively little suffering. This was indeed a great advance, but, beyond the use of the silver wire and simplifying the method of operating by it, Dr. Sims contributed nothing more towards developing the operation for repairing the vaginal outlet.

At an early day I satisfied myself that the operation for simply uniting the labia was wrong in principle, as it could afford no support to the rectocele. The operation for the rectocele could not change the profile line along the posterior wall of the vagina from a convexity, and only lessened the curve in a degree. By the application of the simple rules of mechanics, also, it could be shown that this operation was based upon a wrong principle. Under ordinary circumstances the convex surface of the rectum, as it presents towards the vagina, is firmly supported by the perineal body, and with downward pressure, as in the act of defecation, it becomes comparatively a straight line. But in the absence of the proper support the convex line must always prove to be a line of weakness and to be one unable to bear or support any downward force.

When the pelvic tissues are in a state of integrity, the profile outline of the recto-vaginal septum and outlet forms a concavity—a surface mechanically correct and fitted for the purpose. Here any downward pressure would but increase the degree of concavity by distributing the weight from the extremities of the arc towards the centre, where it would be supported by the floor of the pelvis.

The peculiar circumstances under which we were placed in the early days of the Woman's Hospital proved of incalculable value in perfecting these operations at a time when we were entering upon a new field of study. For years it was the only hospital of the kind, and only those connected with it were known to pay any special attention to what is now termed gynecological surgery. As a consequence those who were operated upon had to come back if relief had not been obtained, and it was easy to impress each person benefited that it was to her individual interest to return at regular intervals, that her condition might be closely watched to guard against a relapse.

After I became surgeon-in-chief of the Woman's Hospital

in 1862, I began to perfect the operation for repairing the vaginal outlet in cases where I then thought that the perineum had been torn. But it was not until after I had operated hundreds of times and after ten years that I realized the principles which were to be applied. During that time I had some eighteen women under observation, who represented different stages of development in the operation, and some of these women took the greatest interest in aiding me. I began early to denude more or less on the recto-vaginal wall, but I had no rule to guide me. I made many failures, and when a woman happened to be relieved I did not fully understand how it had been accomplished. I consider that I made no satisfactory progress until about 1868, when I began to denude higher up along the sulci and to carry the freshened surface across the rectocele on the same plane. I gradually denuded more and more on the presenting face of the rectocele, and included the surface in the same sutures used to bring the lower portion of the labia together. But it was not until 1872 that I extended the denudation to the crest of the rectocele. I then realized for the first time, as I drew this surface forward, that I was restoring the posterior wall of the vagina to its natural shape, but as yet I had made little advance towards lifting it up in relation to the anterior one.

Thus far I had developed the trefoil or butterfly operation, as it is termed from the shape of the denuded surface, and the parts were all brought up together by deep interrupted silver sutures introduced from the skin and through the labia, as Dr. Sims had done for the first time some sixteen years before. In other words, to the operation as practised by Dr. Sims, where the lower portion of the labia to a moderate height was denuded so as to represent two wings, I added the body by denuding in addition the surface on the posterior wall of the vagina. This was the operation which has gradually come into general use, though to many its history is unknown.

It was not, however, until October, 1881, that I may claim to have perfected the operation on a patient in my private hospital, where I was assisted by Dr. George T. Harrison and Dr. Bache Emmet. The surfaces I then united, as I have continued to do, can be shown as follows. Draw forward with

a tenaculum, while the woman lies upon her back, the crest of the rectocele to the urethral outlet, there to be held by an assistant; then, with a tenaculum inserted in the lowest caruncle on each side, open the vaginal outlet by lateral traction. When this is done two triangular surfaces are formed, with the apex of each terminating in the vaginal sulcus on each side, and these are the surfaces to be united and brought together. When the vaginal outlet is patulous, the outline of these two triangular spaces can be made even more prominent by drawing the fourchette somewhat downward and forward with an additional tenaculum. After these surfaces have been denuded, they are brought together by interrupted silver sutures, which are in turn twisted and turned down upon the posterior wall of the vagina.

After the surfaces on each side have been brought together just behind the fourchette, the continued line will form a crescent with the extremities extending in the sulcus on each side, and a few external sutures, to unite the line between the fourchette and the skin, will complete the operation.

There seems to be great difficulty sometimes in understanding this operation, and yet there exists less difference between it and the one in general use than at first glance may seem to be possible. It may be stated in a general way that the same outline of surface is denuded in the vagina for both operations, but in the last one I have described we may, for illustration, leave off half of each of the outer leaflets of the trefoil, as I no longer denude or unite any portion of the labia. The surfaces to be united in the vagina, as I have stated, are essentially the same, but are now made more extensive in one by denuding higher in the sulci and upon the sides of the vaginal wall on a level with the caruncles. The shape is changed by drawing out the angles as I have described, and by introducing the sutures in a different manner. The direction of the sutures is the same in both, but instead of passing from the skin through one labium into the vagina, then including the rectocele and out through the labium on the other side, as was formerly done, I now use a suture on each side in the vagina; or two sutures are used, in the one operation, to bring together the parts, where one from outside is used in the other.

I must refer those who are not familiar with the details of

the operation to the last edition of my work on "The Principles and Practice of Gynecology," and to a paper on the subject to be found in the Transactions of the American Gynecological Society for 1883.

When this operation is properly done it does certainly remove the rectocele and restores the vaginal canal and outlet to their natural condition. It relieves the woman of bearing down and the sensation of weight, and it stands better the test of child-bearing than any other.

Recently a woman entered my service at the Woman's Hospital and was seen by my assistant surgeon, Dr. J. Duncan Emmet, and by the house surgeon, Dr. Paul Kimball. She had been operated on by me nine years before in the hospital for a supposed laceration of the perineum with rectocele. Since that time she had had two children, and the last labor was of so severe a character as to result in a deep double laceration of the cervix; yet the vaginal outlet, which I had repaired years before, looked almost as though she had never borne a child, the two sides of the vagina being in close apposition. This is the test of the operation, when properly performed, that the posterior wall should be lifted up to the anterior one, and that the vaginal outlet should be closed. And yet I have frequently seen the operation attempted, and completed to the entire satisfaction of the operator, where the vaginal outlet was left more patulous than before. As it was not understood clearly what was to be accomplished, the result must necessarily be a disappointing one and the patient not benefited.

It is often difficult to remove the vaginal sutures, and this has been advanced as an objection to the operation. But it is one I now overcome with advantage to the patient by leaving the sutures undisturbed for three weeks, and by keeping her in bed for the same length of time. The outside sutures should not remain longer than seven or eight days.

The class of cases where the operation for turning in the tissues along the median line can be employed with advantage is when the chief prolapse of the rectal wall is from above, while the uterus remains without version and only slightly prolapsed. And I may add, it is also applicable in a certain rare condition where the seeming rectocele is composed of

Douglas' cul-de-sac, the lower portion of which extends to the vaginal outlet and protrudes from the labia.

When a prolapse of the recto-vaginal wall has become more extended than an ordinary rectocele, it is then necessary to turn in the tissues from above downward along the median line, and to secure them with interrupted sutures to a point where and below which the prolapsed tissue can be brought forward and disposed of as in the usual operation for restoring the vaginal outlet. This mode of operating is often called "Schroeder's operation," yet it has been the usual one employed for such cases at the Woman's Hospital from an early day, and I think it not improbable that it was in use there before the accredited author had even entered the profession.

A prolapse of Douglas' cul-de-sac has to be treated differently for fear of doing damage to the intestines, which are sometimes within the pouch. After the walls of this pouch have been pushed up into the abdominal cavity by means of a sponge probang, the opening through which it came down can be felt with the finger like the separated and thin edges of the abdominal wall where a ventral hernia has formed after a laparotomy. My plan is to begin and denude a strip from close behind the cervix on each side and around the limit of the opening. These surfaces are then united in the median line by interrupted silver sutures, the pouch being kept back with a large sound until the lower portion has been closed. The remaining part, which is a rectocele, is then treated in the usual manner.

In closing this paper, which has extended far beyond the limit contemplated at the beginning, I wish, in justice to myself, to place on record the fact that I was the first operator to include any portion of the recto-vaginal wall in the operation for repairing the vaginal outlet. Consequently any operation for closing a "lacerated perineum" which includes the recto-vaginal wall is but a modification of the operation devised and perfected by myself. There are members of this Society who have served as house surgeons in the Woman's Hospital at different times since 1864, and not one of them has ever seen me repair the vaginal outlet without including some portion of the posterior wall of the vagina.

WHAT IS THE PRESENT MEDICO-LEGAL STATUS OF THE ABDOMINAL SURGEON ?¹

BY

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THE line of thought outlined in this paper, no matter how expressed, is intended to be suggestive rather than dogmatic, inquiring rather than assertive, as indicated by its title. The recent rapid advancement of the surgery of the abdomen has inevitably led to its separation from the general surgical field into a distinct specialty; it finds itself in a new environment, without traditions or statutes for its guidance, and hence with only a comparatively recent experience on which to found its legal or surgical status. For these and other reasons we may not speak in this place except suggestively or inquiringly.

That abdominal surgery now holds a place distinct and apart from other branches of the surgical art need scarcely be argued here. That it must of necessity be considered a specialty appears reasonable when we contemplate the nature of the organs dealt with, and the variety in the character of the operations upon these organs. The great point to be insisted upon is that the lines that separate it from the other divisions of surgery are so well marked that, no matter how well a man may be equipped in these, unless he has had abdominal experience he has no right to enter its domain except under urgent necessity, where delay will lose life or endanger it less than the inexperience which proposes to operate. It is surprising that men without such experience, either practical or theoretical, will insist on attempting the work of

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reformed abdominal surgery, than which there can be nothing more delicately refined, or exacting in all its details. The inexperienced surgeon will hardly risk tenotomy for a deformed limb, or trephining for focal epilepsy; yet the most illiterate or inexperienced practitioner, but lately become a doctor, considers it his right to rush headlong into an abdomen with his bistoury, maul its contents with his soiled hands, bury the remains with a deceptive death certificate, and complete the farce, which is also a tragedy, by an after-pose before the community as a man who has accomplished something remarkable. This is the kind of work that has carried discredit into the domain of what is perhaps the most delicate branch of all surgery, needing for its success or justification a discriminating knowledge and experience not equalled in any set of surgical procedures.

THE PROPRIETY AND NECESSITY OF THE OPERATION MUST BE
EXPLAINED.

The removal of, or the interference with, organs that have to do with the perpetuation of human life is in itself a serious business; while the responsibility of conservative procedures that shall, in some cases, preserve these where they would otherwise be lost must be looked upon as entailing great responsibility, and as requiring a nice degree of discrimination not to be attained except through great experience, special training, and much study.

Now, while the generative organs only are fundamentally dealt with in gynecology, the work of the abdominal surgeon has a far wider range. Abdominal surgery must deal with all or most of the organs having to do with the nutritive functions of the body—intestines, liver, kidneys, stomach, spleen, and pancreas. While interference or complications with some of these is more or less rare, still they enter into an estimation of the question as possible factors, and are not to be lost sight of in formulating the claims of this branch of surgery to a specialty. In dealing with these several organs for traumatic or pathologically diseased conditions, it must always be remembered that they are hidden from the eye of the patient, their functions not generally understood by the laity, and the necessity of interfering with this or that dis-

eased condition is, therefore, not properly understood. Herein arises the urgent reason for a more or less careful explanation of the propriety or necessity of an operation. This will in many cases eliminate the after-possibility of recrimination on the part of the patient, and save the surgeon a deal of trouble and the opprobrium of misrepresentation. In doubtful cases professional evidence of the surgeon's advice and opinion is to be urgently counselled.

Closely allied to the foregoing is the question of the consent of a patient or friends to an operation. A patient has the undoubted right to refuse operative treatment, however urgent or imperative the need. A patient's consent to the removal of the second ovary, or any after-conclusion that the surgeon may deem wise in the interest of the patient, that might arise during the steps of the operation and must then be acted upon, had better be obtained beforehand. A woman's ovaries or uterus are no more to be removed without her own approval or the consent of her husband, speaking generally, than should the self-same husband be castrated without his own consent. Moreover, since the friends of a patient are more likely to cavil than even the patient, it were well to explain all to them likewise.

THE PREPARATION OF THE PATIENT; THE OPERATION; THE AFTER-TREATMENT.

Having dealt with the necessity of operation and its explanation from a medico-legal standpoint, the next to be considered in the order of sequence is the special preparation of the patient. It is admitted generally by abdominal surgeons that in order to insure success in abdominal work a special preparation of the patient is necessary; this is, at least, so in all its essentials. An ignorance of the particulars of this preparation, no matter what the operator's skill in other respects, should bar him the right of attempting any abdominal operation. These details need not be entered into here; it is enough merely to refer to the important bearing they have on the mental equipment of the abdominal surgeon.

Having prepared the patient, the next step is the operation itself. Once into the abdomen the work is to be done speedily and carefully, having in view always the best interests of

the patient, not the glorification of the operator—not to operate merely for the sake of doing something, and not to unnecessarily prolong the operation lest the narcosis itself does harm. The anesthetic should be administered by an experienced and trustworthy anesthetizer. It may sometimes be—nay, often is—necessary to carry the operation beyond the lines marked out prior to opening the abdomen, as I have previously hinted. Such being the case, it is especially to be urged that the operator hold this fact always in mind, and have provisional permission to extend the operation as far as in his judgment the best interests of the patient are subserved. Now, while an extension of a proposed operation may certainly be justifiable in the interests of the patient, the extreme of this proposition comes up in the right of a woman to refuse operation even to save her life—as, for example, in puerperal peritonitis. The law may say that suicide is improper when attempted by violence, yet it will not interpose and compel the consent of a patient to an operation to save life. Even if it should or could do so, no surgeon would be willing to operate under circumstances where such a contributing influence to the success of the operation as the cheerful assent of the patient would be lost. But if voluntary suicide is wrong, enforced suicide is much more so. A woman may be urgent in her demands for relief, while her husband perversely refuses his consent to surgical interference. Though the wife may possess the legal right to insist upon an operation, the husband's perverseness is among the most serious obstacles to contend with. Here, if anywhere, the law should interfere and compel the consent of the husband to permit his wife to exercise her own judgment in deciding, under expert advice, upon steps necessary to save her life. A man may with as much reason be justified in preventing assistance to his wife in rescuing her from his burning house, as to interfere with her personal prerogative in deciding any other question in which her life is involved. A similar set of questions are to be considered with reference to minors and guardians, and parents and children.

With the operation completed, the after-treatment next claims consideration. If special training is required to prepare the patient properly as well as to do the operation, it is

equally necessary to enforce a special technique in the after-treatment. It is not sufficient that a trustworthy nurse who has had special training be left in charge; the surgeon himself must not only know what is to be done, but he must also do much of the work with his own hands. Herein consists the danger of grafting new methods on to old ideas. To illustrate: Opium was the fundamental, next to the knife, of all ancient surgery. A surgeon would quite as soon have thought of doing an operation with his finger nails as to have omitted, in the after-management, the use of morphia or an opium suppository. Now, if any one thing has been shown to be on the average dangerous in this branch of surgery, it is the use of opium in any form. That the older men, as a rule, find it difficult to bring themselves to an understanding of this fact, is not strange; but in so far as they are unable to resist the temptation to administer opium, by just that much is their incompetency to manage these cases to be measured.

The like is true of the intra-abdominal application of chemical solutions, which are, under the misnomer "antiseptics," but too generally merely irritants. The idea of Listerism must not be carried chemically into the abdomen, if we would escape complications otherwise to be eliminated. Over-refinement is as dangerous in its way as too little refinement.

So, after the operation, it is to be insisted upon that unless the surgeon is accorded absolute control of the patient, even to the point of making the family physician merely an agent in accomplishing what, in his judgment, is required from an operative standpoint for the patient's welfare, no responsibility as to results can be assumed. Indeed, it is best to have such understanding previous to an operation; and if there is demurring, operation should be refused. When a surgeon is chosen to do an abdominal operation of any kind whatever, it should be done with a full confidence in his ability to manage the case from its inception to its completion, and interference with his wishes or directions should not for a moment be thought of or tolerated. If the results then are not satisfactory, from bad behavior on the part of the patient, the friends, or the attending physician, the operator is not responsible.

An ethical question may arise in this relation in case, after

the operation, the patient desires to discharge the attending physician and retain the services of the surgeon who has been called to do the operation. This would place the surgeon in the position of being accused of sacrificing the patient to the "code" if he should refuse to attend, and at the same time subjects him to the criticism of professional thievery if he continues in charge of the case. Since these refinements would scarcely serve one in a court of law, this point should be thoroughly explained to the patient previous to the operation, and the understanding reached that the surgeon for the time being accepts charge of the case simply as the pilot who steers the vessel through dangerous waters, to resign as soon as she has reached and safely passed the danger line. On the other hand, operations for incompetent men who refuse after-assistance, although incompetent to take intelligent care of the patients themselves, should be avoided; as should likewise operations in which a man, with no experience whatever, seeks the assistance of a competent operator in order to have the name of operating. In these cases, if the patient recovers the "assistant" gets no credit; if the patient dies he gets all the blame.

HOSPITAL TREATMENT.

The hospital treatment of abdominal cases needs some elucidation. As a rule a general hospital is not an ideal place in which to open the abdomen, yet it is usually equipped with many conveniences that facilitate the work for the surgeon, and so he operates there often on that account. Private hospitals are less objectionable, and many such are without reproach in this regard. The technique of that management which is to-day conceded to be the best is little understood, speaking generally, by the physician in whose charge these cases have been previously; hence the great tendency to seek the shelter of either the public or private hospitals. Such being the case, it is well to take cognizance here of the fact that unjust strictures often arise from ignorant criticism of the management of individual cases in hospital, and a feeling occasionally is excited both against the hospital and the surgeons connected with it. This was lately illustrated in the trial of a prominent operator in the State of New York upon an indictment for manslaughter. A woman

who had been operated upon at the defendant's private hospital desired to go home on the fourth or fifth day; her friends co-operated with her in the desire and actually did so remove her. She died of septic peritonitis soon afterward, hence the indictment and trial. It may be proper to add that a prominent newspaper, hitherto of reputable standing, lent its influence to accomplish the ruin of this surgeon, thus compromising the good name of legitimate journalism. The surgeon happily was vindicated by the court and jury, but the lesson to be drawn from the case is that under no circumstances should a patient be removed from the place where the operation was done until convalescence or cure is established.

THE TRANSPORTATION OF CRITICAL CASES.

This brings me to remark that the removal of patients who are suffering from peritonitis, ruptured tubal pregnancy, gunshot or stab wounds of the abdomen, and other critical conditions or injuries, may well receive the attention of the abdominal surgeon; for they often require transportation to more convenient and healthful environs before operation. If this be not done with care and with due regard to the particular disease or injury involved, it may exert an abiding influence for harm upon a subsequent operation. Our entire ambulance system may, therefore, be regarded with a jealous eye by the abdominal surgeon, and when possible he should superintend in person the removal of cases that he proposes to operate upon.

There are many other important questions that have an intimate relationship to the medico-legal status of the abdominal surgeon—*e.g.*, the operation for irregular practitioners, operating at a distance from home and leaving incompetent persons in charge, etc.—of which I cannot now speak.

THE AFTER-CARE OF SPECIMENS.

As a last consideration in this group of thoughts, therefore, I desire to bring to the notice of the Section the necessity of carefully guarding the specimens removed. It is a well-known fact that after a growth has been preserved in alcohol it becomes distorted, decreases in size, and that the original lesion for which it was removed is often unrecognizable. If

a specimen of this sort should fall into the hands of an ignorant patient, one capable of being wrought upon by a malevolent medical or surgical "brother"—Heaven save the name!—untold mischief may result. There is yet a feeling rife in the bosoms of some operators that they alone must hold majestic sway of the world's operations, and that any one who also attempts to do the work in which they are engaged must be put down at all hazards. They are members of our medical societies, they are usually subscribers to the "code," are generally prominent in the affairs of church, and are yet little better than professional blackmailers. They scruple at nothing to cast disrepute and discredit upon other men's work, stooping even to get hold of specimens to misrepresent them. The spirit that applied to Atlee the title of "the greatest rascal in Philadelphia" still stalks abroad, and that which prophesied the penitentiary and a shaven head for another of Philadelphia's famous operators is still to be recognized and to be scotched. I deem it of the first importance that specimens should not pass into the hands of patients, and that they should be either kept strictly away from the laity, or, if that is impossible, destroyed.

CONCLUSIONS.

The factors, then, that enter into the inquiry, "What is the medico-legal status of the abdominal surgeon?" and that largely determine that status, may be grouped and summarized as follows:

1. *The Operator's Ability.*—What has been his apprenticeship, what his surgical aptitude, his experience, his fertility of resource—in short, speaking surgically, his abdominal instinct?

2. *The Propriety of the Operation.*—Has this been established beyond reasonable doubt, and have its necessity and dangers been fully explained to the patient and his or her friends; or, in case of minors, to guardians or parents?

3. *The Consent of the Patient.*—Has this been obtained in a legal and binding manner, and have the near friends also consented; and in case of minors have the parents or guardians legally consented, and is there indubitable proof of this?

4. *The Preparation of the Patient.*—Has this been adequately done in accordance with the modern rules of abdominal surgery?

5. *The Anesthetic.*—What form of this was used, and was the anesthetizer experienced in the administration of anesthetics; were the proper precautions taken to determine the relative safety to the patient of the anesthetic chosen?

6. *The Operation.*—Has it been performed with that skill that the present light of the science would demand?

7. *The After-Treatment.*—Was this in all its details scrupulously and zealously carried out under the eye of the operator? Was a skilled nurse employed, who faithfully attended to her duties? Did the attending physician yield absolute control to the operator?

8. *The Environment.*—Was the operation done in hospital, public or private, or at the home of the patient?

9. *The Transportation of the Patient.*—Was the patient removed prior or subsequent to the operation? If so, under what circumstances? Was it with the advice and consent of the surgeon and under his superintendence?

On a trial for manslaughter resultant from a disastrous abdominal operation, some or all of these questions would form proper subjects for inquiry by the court, and therefore appear germane to the purposes of this discussion. Doubtless others will be dealt with by the authors who jointly appear in this debate. I will therefore conclude what I have to say in a few brief sentences bearing on the rights of patients and operators:

A patient has the right to refuse operative treatment, however urgent or imperative the need.

After operation the patient has the right to refuse further attendance or treatment from a physician or surgeon who may have been in charge, either as operator or otherwise.

The patient, if sane, has the right to be removed at any time she may elect. Her actions or movements, her acceptance or non-acceptance of a course of treatment by her physician, are matters of her own option, over which he can exercise no legal control. She can go counter to or in accord with his advice, as she may will. He cannot exercise over her person any authority beyond that to which she consents.

For any act of duress the physician could be held legally liable.

In the matter of the husband, his legal control over the wife would not prevent her from submitting to surgical or other treatment at the hands of a physician of her own choice, but with her consent the husband would have the right to direct or control her movements in the face of any protest of the physician.

The same principles in a modified form apply in cases where there are guardians.

From the foregoing it will be seen that the physician is absolutely helpless in all cases that he cannot reach and control by moral suasion. This places the abdominal surgeon at a peculiarly trying disadvantage, for he is in the rather anomalous position of incurring grave legal responsibilities in cases where he has few legal rights or privileges.

284 FRANKLIN STREET.

RETROPERITONEAL CYSTS OF THE FEMALE SEXUAL ORGANS: A STUDY OF THEIR TREATMENT.¹

BY

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New York.

By this term and that of intraligamentary cysts are designated those growths which originate and develop either from elements primarily within the folds of the broad ligaments (the Wolffian body or organ of Rosenmüller), or those which, springing from the ovary without, work their way, partly or entirely, under the peritoneum, finding their lodgment between its two layers.

Such are dermoid cysts, some ovarian cysts of common type and those developing from the hilum, parovarian cysts and intraligamentary cysts proper, or such as have been called true cysts of the broad ligament (Coblenz). This author also

¹ Read before the New York Obstetrical Society, April 15th, 1890.

mentions two other varieties, the para-uterine and the para-vaginal; but these, being great rarities, need not engage our attention at present, neither shall I dwell upon the parovarian nor the dermoid at length, inasmuch as they can only interest us incidentally in connection with the subject of which I wish to speak in this paper.

Intraligamentary cysts have long been known to be of a peculiar type, and have merited special consideration and study, but it is only within recent years that they have received any particular attention or have been made the subject of any profound research concerning their nature.

Our own text books make little or no mention of this class of cysts, nor do many of the English authorities, which is surprising enough, in that, through the difficulties surrounding them in the way of diagnosis and treatment, they certainly present sufficient features to make them a distinct variety, calling for special indications and rules of conduct.

Olshausen, Hegar and Kaltenbach, Coblenz, Martin, and Schroeder in Germany; Doran, J. Greig Smith, and Tait in England; Koeberlé, Pean, Terrillon, and Terrier in France; Goodell, Howell, and Fenger in this country, are about the only ones whose writings are of value in connection with this subject.

There has been some confusion arising in the study of these cysts; at times they have been viewed as originating from the fetal relics remaining about the hilum of the ovary; by others the same class of tumor is said to spring from fetal relics also, but from that remnant situate between the uterus, the ovary, the Fallopian tube, and ovarian ligament. It suffices for our purpose to consider them as originating within the folds of the broad ligament, extending their growth downward, more and more to be enveloped by this serous covering.

It is admitted by some authors (of which I also am thoroughly convinced) that ovarian cysts of the common type—that is, multilocular, non-papillomatous, arising from the stroma—may also reach out and develop in that direction, the microscope showing them to be adenomatous and containing no cylindrical epithelium, as do those having their origin in the fetal relics.

The difficulties of diagnosis of these tumors are many. Yet, when we consider their mode of formation and symptomatology (as insidious in their growth as is the ovarian cyst; giving rise to pain in the pelvis disproportionate to their size, though readily understood when we recognize their location; the apparently slow development in spite of continuous failing health, which is explained by their spreading but not rising in the pelvis; the disturbances of micturition and possibly of defecation), we have elements of difference between these and ordinary ovarian cysts which should go far towards establishing their nature.

When it comes to the question of physical diagnosis we ordinarily find a tumor of irregular surface, firm and elastic to the touch, low down in the pelvis, reaching out deeply and laterally rather than in height, more or less bound to the uterus and crowding it over to one side, limited by and closely pressing up against the lateral wall of the pelvis, crowding the bladder and the rectum as well, carrying the one high up above the pubes and firmly compressing the other, with pulsating vessels at its base.

On percussion there will be, as a rule, the dulness of solids, but there may be a clear, resonant, tympanitic note, which will be one element to put us on the lookout for something unusual. This occurs through a progressive dissection of the peritoneum by the tumor, by which it opens out the folds of the mesocolon and finally pushes its way behind the colon, crowding it upward and forward.

This describes the typical tumor of this character and its mode of growth, but it is well understood that it may vary in many respects, and in some instances closely resemble the ordinary ovarian cyst, in that either a portion of the development has taken place directly upward, therefore free in the abdomen from the first, or that, as has been supposed, a portion develops in the typical manner beneath the peritoneum at the start, but to such an extent or size that, putting it on the stretch, it finally ruptures through, thus also becoming free in the abdominal cavity. Such a thing may occur directly over the site of the broad ligament, or beneath the posterior parietal layer or anterior abdominal reflexion, though more commonly it is supposed to dissect these up indefinitely.

When we come to open the abdominal cavity, on occasion we may at once have the true state of things revealed, should our intraligamentary cyst be of the ideal type. We notice that the tumor is dark in coloring, of a dingy hue (venous), that the vessels stand out upon its surface, that otherwise its covering seems tense upon it; and, further, we will be struck by the appearance of the Fallopian tube, which is considerably enlarged through congestion, and lies flattened out somewhat, stretching at full length directly across the tumor. Championnière mentions as a frequent sign present, by which we may recognize such tumors, "a wide musculo-aponeurotic band in front of the cyst."

These points of coloring and enlarged vessels denote fully the abundant supply of blood reaching the growth, and we can infer from it that there exists a pretty intimate relation between the cyst proper and its capsule.¹

One case of intraligamentary cyst I recently had to deal with and removed was passed upon by two eminent gynecologists as fibro-cystic in character. Once the abdomen was opened, examination of the surface and base quickly revealed the nature of the growth, which I would willingly have left as I found it, and so proposed doing, but oozing from slightly torn adhesions became so profuse (welling up from under the tumor, not controlled by flooding the cavity with hot water) that I felt the greater safety for the patient lay in enucleation of the mass, hoping yet to get a ligature about the base as a pedicle. I was successful in the enucleation, but time and

¹ The question need not now be discussed whether this intimate relation be due entirely to nutrition following upon contiguity, or whether positive adhesion has been formed through inflammatory action as well. Goodell, in the *AMERICAN JOURNAL OF OBSTETRICS*, January, 1888, in speaking of this connection, says: "The relationship is one of continuity, not of contiguity," thus holding that the two structures are absolutely blended without the intervention of any inflammatory action. That this latter mode of attachment is possible, however, I can well conceive; witness the inflammatory adhesions which we constantly find without, and bearing in mind how readily such action extends from one aspect of the peritoneum to the other. This is opposed to the opinion of Hegar and Kaltenbach, who, in 'Wood's Cyclopadia of Obst. and Gyn.' vol. vii., page 157, say: "The serous covering of the tumor is rarely adherent to adjacent parts of the parietal and visceral peritoneum. We have observed such a condition after a puerperal inflammatory process."

blood had been lost, and the shock was great. Though the sac wall was stitched to the abdominal wound and the cavity thoroughly packed with iodoform gauze, hemorrhage recurred; with it, shock was intensified, and the patient died on the second day.

In some cases even of these tumors, which have been called specifically "intraligamentary," we fail to notice the dark coloring, the enlarged vessels, the congested tube, and there is less of an appearance of tightness of the peritoneum over the growth. This is at once suggestive of the simple broad-ligament or parovarian cyst; at any rate, these surrounding conditions indicate a much more satisfactory state of things than is usually met with, and promise that, whatever the cyst, its extirpation is probably not only possible, but that we will meet with but little difficulty in the operation. In short, the peritoneum of the broad ligament, showing, in its natural color and aspect, is evidently not bound to the tumor within, except by the loosest kind of cellular attachment; the vascular supply is light, and the growth can be readily shelled out and the operation terminated quickly and safely, with credit to the operator and security to the woman.

Such a case I had at the Post-Graduate Hospital one year ago. The tumor was of immense size, yet its vascular supply was not abundant and the mass was readily peeled out of its enclosure. The sac, however, was very much torn, and it was exceedingly difficult to bring the remnants together in nice shape to make a closed cavity shut off from the abdominal cavity. I succeeded only in part, stitching the shreds and torn bits, and then packing the sac with iodoform gauze, as related in the other case. This patient I lost also, somewhat unaccountably—simple acceleration of heart action and asthenia; no hemorrhage, no sepsis. I am convinced that here, too, the patient's vitality had been overtaxed, and that she died really from shock, though not primary.

Now, passing the hand low down in the pelvis to investigate the lower portion of such a tumor, we will find that instead of being able to raise it in the pelvis and limit its base to a pedicle, it is as if set in the pelvis; the base is widespread and without limit, except as the broad ligament is limited by its reduplication forward, behind, and to the pelvic

wall laterally. This is the condition even in those which may have developed to a large size, seeming even to be free in the abdominal cavity. Here rests our main distinguishing point between the subperitoneal or retroperitoneal and abdominal tumors. We naturally bear fully in mind also the point which, in some instances, might mislead in diagnosis, namely, the existence of extensive sheet-like adhesions which may spread from the walls of an ordinary ovarian cyst to the parietal walls, giving it the appearance of a tumor partly within, partly without the broad ligament. We must recognize this variety and allow for the possible deception. The truth is, we have here to deal with one point which we cannot solve. It is often impossible for one to say, on first inspection of an intraperitoneal cystic tumor, unless a pedicle can be found, whether it has grown as such, or whether, starting as a subperitoneal or intraligamentary growth, it has burst through its covering and become free in the cavity, or whether, again, it is covered over by effused lymph. A differentiating point would seem to be, determining by the microscope which portion of a growth is covered by peritoneum and which is not. If a growth burst thus through its covering of broad ligament and continue to develop, we readily see that one portion, its upper, will have no peritoneal covering; the lower portion of the cyst formation, on the other hand, being embedded in the ligament, is entirely invested with it, and the line of demarcation cannot be made out in any way but by the aid of the microscope; it is unnecessary to add that this cannot be made use of at the bedside. Then, again, some cases we meet with go to show—and proving to be ovarian of true type, they do establish—that a tumor may from the outset develop partly within the folds of the broad ligament and partly at large in the abdomen; this portion may in turn be partially covered over with plastic lymph and also show a peritoneal envelope.

Giving all these points full consideration, confusion as to diagnosis may still remain and the most expert fail to establish the exact truth.

A case in point recently came under my observation. She presented many of the conditions of development, location, fixation, etc., described above as characteristic of these pelvic tumors, yet with complete absence of any symptom indicative

of the real nature of the affection. I performed laparotomy and recognized, as I thought, an intraligamentary cyst with many peritoneal adhesions; the omentum spread entirely over it and was fixed; the sigmoid flexure was also adherent upon the upper posterior face; an enlarged, congested tube stretched clear across the mass to the pelvic wall; the ovary was not found, but doubtless was involved in some of the inflammatory adhesions—the entire appearance of things prohibiting any attempt at removal. I would have stitched the highest part in the abdominal incision, and so stated at the time, intending then to open through and through to the vagina and drain; but the mass was crowded too low in the pelvis to enable me to carry this out. I felt it would be a failure to attempt to crowd the abdominal wall down to its level, and no force could bring it up to a higher plane. So I closed the abdomen, then, putting the patient upon the side, plunged a large trocar up into the base of the left broad ligament, and withdrew more than four ounces of fetid green pus. I stitched a drainage tube in the opening, and the patient is now virtually well. Operation was March 15th.

Now, as regards the operation procedure: My experience, as gathered from observing the work of others and the few cases of my own, has led me to consider the causes of the unsatisfactory issue which so frequently attends the removal of these cysts, and to seek what method might be adopted which would insure better results, at least in sparing life and possibly in prolonging it.

It is with this end in view that I have thought it would prove of interest to bring the question up for your consideration and discussion at this meeting, and for that purpose I have presented the subject thus briefly.

It is my desire to learn by argument and comparison of views whether we do not act more wisely and in the interest of the patient in, from the very first, abandoning the attempt at enucleation if we find the wall of a cyst extremely adherent to the broad ligament, if we are undertaking the operation upon a patient already enfeebled from any cause, or if we see that she is bearing an anesthetic badly or is experiencing considerable shock, recognizing that such and such an operation must be classed among the unfinished ones, and seek

relief, if not cure, of our patient by merely establishing and maintaining drainage.

A consideration of these points may, I hope, be of considerable value, in that no positive rules for guidance are laid down in our text books, except to do as well as we can under the circumstances; and, now that every one is performing laparotomy, it may serve the interests of all if we are enabled to throw the light of many experiences upon the subject.

We of course recognize that if the tumor be ovarian it can and should be removed; also that, if the conditions are fairly favorable, the operation of extirpation should be recommended and encouraged if the growth be intraligamentary in the first instance, but have burst its envelope in one part, so as to assume an appearance of semi-freedom, of liberty in the abdominal cavity—its base, in short, forming something of a pedicle.

For the above, the one with firm adhesions about its base, or for one partially embedded, we have the excellent suggestions of Miner, of Buffalo, to guide us, and enucleation after his method may be practised with probable safety, in that it will require only a moderate length of time to perform and that hemorrhage will be slight. The same precept will hold good, as a matter of course, if we have the parovarian cyst, and also in case of an hematoma within the ligament. Still further will I specify that this enucleation is to be advocated in those intraligamentary cysts of pure type yet simple in character, which, through their undeveloped vascularity and consequent loose union with the sac, may be shelled out with comparative ease.

It is in these, if it can be recognized by sliding the peritoneum over the mass beneath or even possibly by pinching it up that it is not markedly adherent, that we may proceed boldly, slitting the broad ligament from the uterus to the border of the growth and turning out the mass with but little difficulty, then to either leave the sac to itself (as advocated by Miner and practised by Olshausen, quoted by Fenger), or to drain it by glass tube or gauze to the abdominal surface after the method of Mikulicz, or by puncture through to the vaginal vault, following the plan devised by Martin, of Berlin.

Here we are not met by tedious dissection, profuse bleeding, loss of time, profound shock, and death on the table.

When we can recognize that the mass before us is firmly grown to its surroundings; when we reflect on the difficulties to be encountered; when we find parts bound together so closely that, as says Terrillon (*Rev. de Chir.*, 1884), "it has occurred to some surgeons to even remove a portion of the uterus with the tumor, thus complicating an ovariectomy by a hysterectomy"; when, as Goodell says (*AMERICAN JOURNAL OF OBSTETRICS*, 1888), "the vascular and structural fusion now subsisting between the two is as vital and as integral as that between the womb and its oviducts or its round ligaments," . . . "and in some cases it will be safer to extirpate the womb together with the adherent sac than to attempt to free it"—then it is that I would advocate another mode of treatment which, though not positively curative, will still spare the patient's life and may aid in prolonging her days. The suggestion is to cut off the vascular supply of the tumor and to drain it of its contents. This has of novel about it simply the thought, at one time put forward for fibroids, to *starve the tumor*. The method of accomplishing it is not absolutely new, for the same procedure has been suggested by Terrier (*Soc. de Chirurgie*, 1883) as a first step in attempting to remove the growth.

The intraligamentary cyst proper is so abundantly supplied with large vessels and anastomoses that this precaution will prove a most desirable one, and by its help we may be able to save many a patient from death by bleeding. As hemorrhage is checked in such a case, the blood supply being almost entirely cut off, so would the same method certainly prove serviceable towards arresting the growth of the tumor and causing its molecular death; even those terrible vegetating papillomata must succumb if we cut off their supply of nutriment.

There are two or three vessels to tie—the ovarian, the uterine, and that occupying the round ligament, which springs from the epigastric, and possibly an enlarged anastomotic between the first two, if we can reach it. It is well to tie the vessels as far away from the tumor as we can, to secure the main trunk, for the very purpose of reaching beyond the anas-

tomotic branches. We readily see that the ovarian artery is the one most easily accessible, in that it usually lies on the surface of such a tumor in the neighborhood of the Fallopian tube. The uterine artery, being in the depth of the pelvis below the tumor, and out of reach at this point from the abdominal cavity, must needs be sought by the finger within the vagina feeling for its pulsation. It should then be surrounded by a curved needle with ligature and tied, and once again secured at the horn of the uterus, where it meets the ovarian, otherwise the various anastomoses reaching it in its course up the side of the uterus will still maintain an undue supply of blood and interfere with the success of our project. Having tied the two main vessels, we may feel we have largely controlled the supply of the growth, and any other blood, no matter whence it comes, will no more than maintain the vitality of the tumor and save it from undergoing a too rapid disintegration.

Stephen Y. Howell, M.D., of Buffalo, in his excellent article entitled "The Pathology of Ovarian Tumors," published in Mann's "System of Gynecology," speaks of "involution and atrophy of a tumor, following rotation, to which attention was first directed by Rokitansky." He also says: "This takes place in cases where the supply of blood is diminished by the torsion" (pedicle) "to such an extent that it no longer suffices for the complete maintenance of the tumor, though still large enough to prevent the occurrence of gangrene"; and in a note: "Atrophic changes in an ovarian tumor have also been caused by inflammatory adhesions; the pedicle, which was free from twists, being sufficiently compressed by the contraction of the new tissue." "The secondary changes in such cystomata are chiefly fatty degeneration and calcification, the tumors diminishing in size with varying rapidity, and their remains finally appearing as hard masses, within which more or less fatty detritus of a brownish color is usually found."

The next thing is to stitch the surface of the sac to the abdominal wound, should it be possible to bring them in contact; should we have to deal with the papillomatous growth, however, the variety which is the most clinging to its envelope, it is not desirable to proceed in the same manner, for

the reason that unless the wall be very thick, which is not common, enabling us to take a good hold in it with our stitches, we will penetrate the sac and carry infection with every fresh needle-thrust. This would only insure the rapid development of the papilloma on the peritoneal surface. Again, should we have opened down on an abscess in this location, it would prove an unsatisfactory job to stitch through and through its wall, bringing out pus with each fresh hold.

Once this coaptation is made complete, the next step should be to open up the sac freely and to empty it of its contents, then to establish drainage. This can be done either with glass tube or with iodoform gauze packed into the cavity, the latter mode rapidly becoming more acceptable as it proves itself the more efficient. Or, as is now practised by some operators when dealing with a sac which cannot be fully removed, or with its bed after removal, an instrument may be thrust through the bottom of the tumor, coming out in the lateral or posterior sulcus of the vagina (Schroeder and Martin); this instrument will draw back a rubber drainage tube which will be brought out at the abdominal surface and made fast. This establishes through-and-through drainage, which I believe must at all times be considered far better than merely draining the sac from below, as is done if one shut the collapsed sac down upon the tube.

In case it should not be possible to stitch the sac to the edges of our incision, the abdomen should be closed, the dressings and bandages be applied, and the tumor should be tapped from the vagina after placing the patient upon her side.

The opening is best made by thrusting a pair of sharp-pointed scissors boldly into the mass, and widely opening out the blades on withdrawal. This will give us a free opening, by which we can both empty the sac and insure free washing and drainage. A rubber tube stitched in the wound, or a coil of iodoform gauze stuffed within the opening, will complete this part of the operation. Later on, from day to day, we may break down the mass within with a dull curette, and by using injections of iodine of constantly increasing strength we may hope to either obliterate the mass, arrest its growth, or retard its development.

Whether it be an abscess in the broad ligament, whether an ovarian cyst within its folds, whether it be the papillomatous tumor of the ovary or the papillomatous cyst of the broad ligament, I believe that we will accomplish more good in the way of prolonged years of life than by taking our chances or putting the patient to the risk of death by shock, hemorrhage, septic peritonitis, or that, equally sure, ensuing upon a torn ureter. Since writing this article—two days ago, in fact—on looking over the discussion of a paper by Terrier on “Intraligamentary Cysts,” in the course of which a couple of members of the society mentioned the possible atrophy of portions of sac left *in situ*, he saying such an occurrence must be very rare, yet recognizing the fact as a very valuable one, I find that he adds: “One might question if this salutary atrophy might not be favored by tying the vessels which nourish the tumor.” He says nothing further, so we are at a loss to know whether this was intended to mean at the time of partial removal, or, as I have advocated, leaving the growth untouched except for drainage. Terrier’s remarks were published in 1883, and I know of nothing later from him on the subject; still, I am reminded that “there is no new thing under the sun.”

A CASE OF LABOR IN AN OBLIQUELY CONTRACTED. ANCHYLOSED PELVIS.¹

BY

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Mrs. G., 22 years old and a native of Poland, is said to have been delivered of her first child by forceps in August, 1888, and was taken in labor for the second time on December 4th, 1889, under the care of Mr. H. F. Curtis, of the Harvard Medical School.

Mr. Curtis found a presentation of the head, o. d. p., the os

¹ Read before the Obstetrical Society of Boston, February 18th, 1890.

nearly dilated, and all the other conditions apparently normal; but no progress being made in the next few hours in spite of the presence of sthenic labor, at 6.30 P.M. he sent for me. I found the head movable above the brim, o. d. p., nearly transverse, membranes intact, and labor present. I ruptured the membranes, the head promptly engaged, the position became transverse, and I left the patient to the charge of Mr. Curtis.

Six hours later I saw her again with the conditions unchanged, except for the presence of a large caput and that the position was now o. d. a.; I then etherized and took the following measurements, Dr. G. W. Allen present and assisting: Iliac spines, 22 cm. (about 9 inches); iliac crests, 25 cm. (about 10 inches); external conjugate, 20 cm. (about 8 inches); diagonal conjugate, 12 cm. (about $4\frac{3}{4}$ inches); symphysis long and rather erect; calculated true conjugate, 10 cm. (about 4 inches).

This result failed to explain the delay, as the head was plainly of no unusual size; but on the introduction of the half hand an internal palpation of the pelvis showed it to be evidently oblique and with the larger side towards the right.

The general shape of the inlet gave me the impression that the pelvic space was not greatly diminished, and that the head would pass most easily if after-coming and with the face directed to the larger side. I accordingly introduced the hand, found the right foot, and turned without especial difficulty, in spite of the presence of a moderately well marked constriction ring. The shoulders appeared at the vulva, the arms were easily extracted, and the head, which in another position had been delayed six hours, passed the pelvis and distended at the vulva under the influence of a uterine contraction and almost without traction from below.

The child, a girl of eight and three-quarter pounds, breathed spontaneously, and mother and child have since done well.

I then took the external measurements recommended by Naegele, with the following results: Left posterior superior spine to right anterior superior spine, 22 cm.; right posterior superior spine to left anterior superior spine, 21 cm.; left posterior superior spine to symphysis, 20 cm.; right posterior superior spine to symphysis, 19 cm.; left posterior supe-

rior spine to left anterior superior spine, 15 cm.; right posterior superior spine to right anterior superior spine, 16 cm.

The measurements usually taken to the same anterior points from the ischial tuberosities and trochanters are always of less value, and were rendered worthless in this case by the extreme stoutness of the patient; but the constant difference of a full centimetre in all the measurements taken is more than is usual, and is quite sufficient to establish the diagnosis of this deformity, occurring, as the absolute size of the diameters implies, in a pelvis of originally ample size.

The delivery of the after-coming head with the face to the larger side is in opposition to the prevailing practice, and, though I think proper here, would probably have been less easy than in the other position, had the pelvis as a whole been smaller. The unusual result in the delivery of a living child was, of course, also due to the absence of general contraction, and the case well illustrates the remark of Schroeder, that "from the fact that the obliquely contracted pelvis has rarely been recognized in the living subject, the conclusion might be drawn that the diagnosis is beset with unusual difficulties, but this is only so far true that with the usual methods of pelvic examination we may easily overlook such a deformity. We possess, however, at least in the higher degrees of the deformity, diagnostic signs which, when the suspicion has once been excited, allow us to confirm or refute it. Everything depends, in a given case, upon our thinking of the possibility of the presence of an ankylosed, obliquely contracted pelvis."

There was no marked inequality in the patient's legs, and no reason for the deformity could be assigned other than non-development of the left ala of the sacrum.

The extreme rarity of this form of contraction, especially in this country, seems to me sufficient reason for putting this instance of it upon record.

THE CESAREAN OPERATION, WITH THE REPORT OF A
CASE.¹

BY

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IN choosing the subject of Cesarean section it is not my purpose to attempt a narration of its history, or to portray the various hardships through which it, like every other capital operation, has passed before reaching an established position in the surgical arts. All that has been well described by Drs. W. T. Lusk and R. A. Murray, of this city, and Dr. R. P. Harris, of Philadelphia. I shall only attempt, therefore, after giving the history of a successful case of my own performed some months ago, to call attention to a few points in the technique of the operation, hoping that the discussion which may follow will add materially to our knowledge of the requirements necessary to secure the most perfect results from its performance.

It is a noticeable fact that as the profession advances in the technique of surgery and the use of antiseptics in the treatment of surgical cases, in like proportion does the number of successful results rise and the mortality decrease. There is no more striking illustration of this than the results which have been achieved in Cesarean work during the past few years.

In the early history of the operation it was considered not only extremely dangerous, but, by the body of the profession, unjustifiable, and by all as only to be resorted to in extreme cases when every other method had been exhausted in efforts to deliver the child *per vias naturales*; and when performed it was done in a crude, inartistic, and unfinished manner, with the hope of saving the mother's life, after her strength had been utterly exhausted. Is it to be wondered at that few successes were recorded up to the time when Säger's method

¹ Read before the New York Obstetrical Society, April 1st. 1890.

of operating was published? But that was a number of years ago; since that time abdominal surgery has advanced from infancy almost to maturity, and we now find eminent surgeons, both in this country and in Europe, who not only consider the operation a justifiable one, but advocate its early adoption in preference to the sacrifice of the child after vain efforts to deliver by version or instruments. With the advance in our knowledge of abdominal surgery, and the multiplying reports of successful cases of Cesarean section in cases of deformed pelves, there is gradually creeping into the minds of the profession, especially obstetricians, a desire to avoid craniotomy and save the life of the child by the adoption of some other measure. Consequently greater efforts are being made to obtain the consent of the parent to the adoption of the more radical method of abdominal delivery.

Especially is the sacrifice of the life of the child much dreaded among Catholic people, and the church is firmly opposed to craniotomy. Its bishops and priests impress upon their people that under no circumstances should the destruction of the unborn and consequently unbaptized child be permitted. The position they assume is that a wanton destruction of life is unjustifiable, and especially when the victim cannot consent. The child is in this condition by no act of its own, but by that of the father and mother, and therefore all reasonable risks to the mother must be taken before the unborn should be sacrificed.

The bishops are strongly in favor of Cesarean section, and, as a rule, are thoroughly intelligent and well informed in regard to all these matters. One of the most noted in the country said to the writer that he saw no reason for the Porro operation, and should not permit even that when he could prevent it, for it deprived the husband of his natural rights, inasmuch as he marries a wife to be the mother of his children and not simply for prostitution; that when there was deformity of the pelvis repeated Cesarean section should be resorted to or *absque marito*, which the priests enjoin and enforce.

We already know from experience that women have been successfully delivered of healthy children by repeated Cesarean section. Then why resort to the Porro operation, which, although it saves the life of the child and the mother recovers,

leaves the latter ever after a mutilated as well as deformed woman? Certainly cases will occasionally present themselves where the pregnancy is complicated by a fibroid tumor so situated that section of the uterus cannot be made, but they are the exception rather than the rule. However, a discussion of the merits or demerits of Porro's operation does not come within the scope of this paper, and I mention it here only to express my belief that unless accident occurs, similar to that reported in the case operated upon by Dr. Coe, it will seldom be necessary to resort to so grave a procedure.

With the Cesarean section my experience has been limited to one case, which I shall describe in as plain a manner as possible.

Miss D., age 16, single. Dwarf from curvature of the spine in the lumbar region. Height four feet six inches. She was brought to my clinic by her mother, who did not suspect her real condition; but having noticed an increase of the girl's abdomen, feared she might be developing a tumor, as she had always been a sickly child. Physical examination indicated that she was in about the fifth month of pregnancy. The pelvis showed marked deformity, and its various measurements, taken at the time with as much care as possible, were approximately as follows: The brim of the pelvis was contracted antero-posteriorly. The width of the symphysis pubis was two and one-half inches. The measurement between the tuberosities of the ischii was two and three-quarter inches; from coccyx to inner lower border of the symphysis two and one-half inches, and from anus to symphysis one and one-half inches. The mother was informed that, with that condition of the pelvis, the indications were that her daughter could not be delivered naturally of a full-time child. The dangers of inducing premature delivery were explained to her, and to that she strongly objected, she being a Catholic. Soon after this examination arrangements were made for the patient, and she was sent into my service at Randall's Island Hospital, where she was allowed to remain until her pregnancy was at full time. During this time (nearly four months) her suffering was comparatively slight, and that from pressure of heart and lungs. On February 14th, 1889, her labor commenced, and toward the next morning the sac ruptured and a portion of

the amniotic fluid escaped. House Surgeon Dr. Hicks was in charge of the case, with instructions to make no efforts to deliver the child by instruments until I should be called. I was sent for at mid-day, February 15th. The patient had then been in labor twenty-four hours, and the os had dilated to the size of a shilling. Digital examination showed the child's head to be too large even to engage in the superior strait. It was decided that a version could not be done with any prospect of saving the child, so efforts were not made in that direction. The patient had not become exhausted, and her pulse was good, likewise that of the child. She was at once brought to the operating room, put under the influence of ether, and delivered in the following manner: An abdominal incision about six inches in length was made, exposing the uterus to good advantage. An elastic tubing was then passed over the fundus, carried well down into the pelvis and drawn tight with a half-knot, then given to the care of the senior house surgeon, Dr. Small, who sat between the patient's limbs. Two large, flat sponges were then placed over the intestines above the womb, and the patient was ready for the uterine incision.

The traction made by my assistant upon the rubber tubing kept the uterus firmly pressed against the abdominal walls and prevented any blood or fluid from making its way into the abdominal cavity. In making the uterine incision, the knife quickly entered the placenta and evidenced the fact that the latter was attached to the entire anterior wall, necessitating its removal before the child could be delivered without danger of tearing the uterus. The placenta was quickly separated from its attachments and removed, then the child grasped by the feet and delivered without difficulty. As fast as the uterus contracted, the assistant having the rubber ligature in charge made gradual traction upon it, and when the fetus was delivered the uterus had been drawn through the abdominal incision. No blood or amniotic fluid had been permitted to enter the peritoneal cavity. Sponges were now placed around the uterus and the latter thoroughly cleansed of membrane and washed out with a bichloride solution. The hot solution caused the uterus to at once contract thoroughly.

The question of uterine sutures now arose, and I determined to use the catgut. My method of applying them was as fol-

lows: After having thoroughly fastened the catgut at the lower angle of the wound, working from below upward, I used the over-and-over stitch, including in the first row the endometrial surface and about an eighth of an inch of the metric tissue. I ran the suture off into the sound uterine tissue and fastened it carefully; this closed the uterine cavity and prevented drainage from the uterus over the wound while I closed the rest of it. I then took a second row of sutures in the same manner (using fresh catgut), and included in this the muscular wall with the contained blood vessels, sinuses, etc. A third row of sutures was then introduced, including what remained of the muscular tissue above the middle row and the peritoneum covering the uterus. In placing this line of sutures I did it with great care, and only allowed the catgut to just touch upon the surface of the peritoneum. The elastic ligature was removed as soon as the second row of sutures had been completed. At no time had it been sufficiently tight to completely shut off the circulation. After carefully closing the uterine wound in the manner I have described, the organ was returned to the abdominal cavity; and although no fluid had been allowed to enter the abdomen, the latter was thoroughly washed out with boiled water at about 110°. The abdominal incision was then closed with catgut, using two rows of sutures. The time of operation was one hour and twenty minutes. The patient rallied quickly with a strong and regular pulse, due, I think, to the fact that during the operation the amount of blood lost did not exceed two ounces.

It would be an unnecessary waste of time to describe her daily progress toward recovery. Suffice it to say that her convalescence was uninterrupted, and the only point worth mentioning is that the bowels were kept regular after the first twenty-four hours. She nursed her child on the third day. On the sixth there was slight fetor of the lochia, which was relieved by bichloride douches. Her highest temperature was on the sixteenth day, caused by a mastitis. The wound healed almost entirely by first intention, and the patient sat up on the twenty-fourth day. The child weighed seven pounds when delivered. It lived to be five months old and died of cholera infantum.

I am well aware that the method adopted in closing the

uterine wound in this case is one not in use at the present time, and has even been condemned by no less an authority than Dr. Harris, who reports one case (No. 4), in his table of seventeen, as having been closed with five catgut sutures, which gave way and allowed the wound to gape. I certainly should not recommend sewing up the uterus with interrupted catgut sutures, for I do not think they would hold. I think that the use of the catgut within the abdomen for suture purposes should always be in the form of continuous stitch. The knot is then at each end of the wound, where there is little or no traction.

Used in the manner I have described, the catgut has many advantages over any other suture. It brings all parts of the cut surfaces into close apposition, and the first or internal row of sutures effectually closes the uterine cavity and prevents any intra-uterine gaping of the wound, which would have a tendency to allow of sepsis from absorption of the lochia; while the middle and superficial rows prevent hemorrhage from the severed vessels and bring the cut peritoneal covering of the uterus into such close apposition that in a very few hours union has taken place and the abdominal cavity is thoroughly protected from the dangers of uterine leakage. Now, if we take care to begin early stimulation of the vermicular action of the intestines, the danger from adhesions between the latter and the uterus, or even between the uterus and abdominal walls, will be reduced to the minimum. I grant you that this method of suturing the uterus requires a little more time and care than does the method of interrupted suture with silk. But when the success of the operation, and really the life of the mother, depend almost wholly upon getting primary union of the uterine wound, I do not deem it justifiable for any surgeon to work against time in this operation, especially when the patient bears the anesthetic well. Another reason why I prefer to use catgut in this and all other intra-abdominal work where it is possible, arises from the now well-known fact that silk, when used in the abdominal cavity, does not absorb, but becomes encysted. As some proof of this I show three specimens this evening, removed from the abdominal cavity in a perfect state of preservation at respectively five weeks, six and nine months after insertion.

In the early history of the operation the opinion seemed to prevail that, because the uterus was contractile tissue and would by its own inherent power contract and stop all hemorrhage, it was unnecessary to suture the uterus. But post-mortems revealed gaping wounds through which lochial discharges were permitted to enter the abdominal cavity and become a focus for peritonitis.

Säuger's method of suturing the uterus was a great improvement, as successful results have shown. Must we necessarily consider that the operation is now a perfect one, or shall we, if possible, improve upon Säuger's method and use some form of suture which will not be attended by the dangers I have mentioned and finally return to us months after through some sinus formed by its own irritation?

This is only one of the many points to be considered in endeavoring to obtain the best results in Cesarean operation. Another of equally great importance is the time at which the operation should be done. I believe it is now the opinion of the majority of operators that the patient should not be allowed to remain in labor until she has become exhausted and her life is in danger as well as that of her child, but that the operation should be resorted to early; and some even advocate that it should be done before labor has set in. I question the advisability of the latter procedure, for the reason that one of the essentials to success is thorough drainage from the uterus. If we operate before labor has progressed sufficiently to have dilated the external os enough to allow of good drainage, especially in cases of first delivery, it may become necessary to forcibly dilate the cervix to relieve intra-uterine tension—a procedure which would subject the patient to extra danger.

It is not my intention in this paper to attempt any comparison of statistics between this operation and craniotomy, because I do not think there can possibly be any fair comparison between the results obtained from a capital abdominal operation that has been imperfectly done in the majority of cases in the past, and those obtained from craniotomy, which is as old as the obstetric art. Neither do I think that the future of the Cesarean operation should be judged by the results obtained in the past. It is my firm belief that the latter can be im-

proved upon to such an extent that the dangers attending its performance, when the patient has been properly prepared for it, will be on a par with craniotomy, and many children will be born alive that would otherwise be sacrificed. It only needs a proper education of the people to the necessity of early operation, a proper preparation for it, the best possible method of closing the uterine wound, and the ordinary after-care that we now give to our every-day laparatomies.

The points in this paper upon which I especially invite discussion are :

1. Is it advisable to operate before labor has set in ?
2. Is it best to lift the uterus from the abdominal cavity before incising it ?
3. What advantage have buried interrupted silk sutures over the method I have advocated ?
4. Is the danger of uterine gaping from contraction of that organ so great as to make the use of catgut, in the method I have described, unsafe ?

ACUTE PUERPERAL INVERSION OF THE UTERUS.¹

BY

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In presenting a paper to you upon the subject of inversion of the uterus, the rarity of such accidents shall be my apology. I am aware that single cases have not much value, but every case of this grave complication should be reported. Inversion of the uterus has been recognized from the days of Hippocrates, yet the literature upon the subject is not very voluminous.

The accident probably occurs more frequently than is indicated by statistics. Many cases are not reported, and the accident may occur without the attendant being aware of it. Its frequency is variously estimated : at from one case in one hun-

¹ Read before the Indiana State Medical Society, May 14th, 1890.

² Prof. Matthews Duncan meets with one case of inversion of the uterus yearly (*AM. JOURN. OBST.*, vol. xxii., No. 9).

dred and ninety thousand deliveries to one in fifty thousand. Reeves estimates it at one in one hundred and forty thousand deliveries. In this paper only acute inversion will be considered. In four hundred cases of inversion of the uterus collected by Crosse, three hundred and fifty were connected with gestation and occurred at its conclusion. It is not only the gravest of uterine displacements, but it is one of the most formidable accidents connected with parturition.

Three degrees of inversion are described. In the first the fundus is depressed and a cup-like cavity is formed which may be felt through the abdominal walls; in the second the fundus has descended to the internal os uteri; in the third degree the fundus and the body have passed out of the os and may even pass out of the vulva and be external, the vagina undergoing partial inversion. We will notice some of the causes said to contribute to this accident. In Lusk's "Midwifery" we find the following: "The production of inversion is favored by a large relaxed uterus, the result of over-distention, of rapid delivery, or of hemorrhage. The immediate cause may be either pressure exerted from above or traction from below. The first may proceed from straining efforts, especially in a sitting or kneeling position, or from attempts at placental expulsion before uterine contractions have been secured. The second may proceed from a short or coiled cord during expulsion, from tractions upon the cord after the child is born, or simply from the weight of the placenta." And he quotes Hennig's conclusions that the attachment of the placenta to the fundus, instead of a more lateral implantation, is an active cause of the accident.

Prof. Parvin, in the "American System of Obstetrics," says that "two conditions of the uterus are necessary in order that it can become inverted—increase of the cavity and relaxation, either general or limited, of the walls. These conditions are presented by the uterus in pregnancy and in labor, but they may also occur if the uterus be distended from other cause than an ovum; as, for example, by a polypus." He also mentions intra-uterine traction and extra-uterine pressure as active factors. Examples of the first are: traction upon the cord; shortness of the cord; forceps delivery with this condition of the cord; and a standing position of the woman dur-

ing the expulsion of the child—pulling upon the cord as probably the most frequent. Second, inversion caused by extra-uterine pressure. This pressure may be manual or abdominal. The former may be in improper efforts exercised to effect the delivery of the placenta by the Credé method. But abdominal pressure alone, there being no manual interference whatever, may cause this accident. In this connection the following quotation taken from Galen is not inappropriate:

“In some women, when the expulsive power is exerted immoderately, the violent pains may drive out the uterus itself. . . . Thus the uterus, when it violently expels the fetus, may itself be at the same time precipitated without, especially if the ligaments which fasten it in the basin are previously relaxed.”

Bedford¹ mentions as causes of inversion rapid expulsion of the fetus, forcible traction of the cord, delivery in the standing position, increased capacity of the pelvis, violent coughing, and shortness of the cord; that in the great majority of instances this form of uterine displacement is due either to carelessness or gross ignorance on the part of the accoucheur.

Dr. Henry E. Crampton, in his article on “Inversion of the Uterus,”² uses the following language: “It seems so contrary to nature that many who have studied carefully its phenomena deny its possibility except from gross mismanagement on the part of the attendant; for example, undue traction upon the cord, or extreme abdominal pressure.” In the same article he refers to Tyler Smith, Matthews Duncan, and I. E. Taylor as denying the importance of traction upon the cord in producing this accident. Crampton makes traction upon the cord accessory only, and says that “nothing can be more difficult than to apportion the blame in a given case.” In his table, traction upon the cord is inferred in thirty-nine of one hundred and twenty acute cases and in twenty-nine of one hundred and four cases of chronic inversion of the womb. In the *AMERICAN JOURNAL OF OBSTETRICS*, Jan., 1890, Dr. Clement Cleveland reports a case of inversion in which he admits that traction upon the cord was the cause of the accident, “yet the

¹ “Princ. and Prac. of Obstetrics.”

² *AMER. JOUR. OBST.*, vol. xviii.

traction was not greater than was justifiable, and no more than should usually be made." (See also case reports by Hollister in the *AMERICAN JOURNAL OF OBSTETRICS*, vol. xxii., No. 11.)

The possibility of the accident happening in the absence of any interference is admitted by all who have recently written anything upon the subject.

Dr. J. C. Reeve, in a paper read before the American Gynecological Society,¹ says: "There is now no respectable authority which does not teach that it may occur independent of anything done or omitted to be done by the accoucheur, although it is to be feared that this truth is not generally recognized by the profession."

Traction upon the cord, either by the usual means for delivery of the placenta, or produced by shortness of the cord or faulty position of a normal cord (as coiling around some part of the child), is mentioned more frequently than any other cause in producing inversion.

Dr. Emmet, whose opinions are entitled to great respect, does not consider traction upon the cord responsible for this accident in the majority of cases; basing his opinion upon the ground that such accidents ought to be more frequent than they are, as traction is employed universally by ignorant midwives. (If we could obtain proper records, I think that we should find that the majority of physicians in general practice also use traction. In questioning my patients in regard to this one point, I find that in previous labors the placenta has been removed by traction in a large majority of cases, and the greater proportion have been delivered by physicians. But while expression is the fashionable mode, traction will be stoutly denied.)

Writers are pretty generally agreed that it is impossible to invert a uterus in normal contraction by any force that can be applied by traction upon the cord. It is certainly a fact that rupture of the cord, produced by traction, is of much more frequent occurrence than inversion of the womb.

Crampton says that "traction alone may induce prolapsus; if severe, procidentia. It will never alone produce inversion." Certain conditions of the uterus are necessary in order that inversion may occur, whether produced by force or not. Re-

¹ *AMER. JOURN. OBST.*, vol. xvii

laxation, as given by Parvin,¹ with paralysis of the placental site, favors inversion by abdominal pressure. Paralysis of the placental site is mentioned by a number of writers, and that inversion most often begins at the placental site.

Rokitansky says: "It is paralysis of the placental portion of the uterus occurring at the same time that the surrounding parts go through the ordinary process of reduction. . . . The part which gave attachment to the placenta is forced into the cavity of the uterus by the contraction of the surrounding tissue, so as to project in the shape of a conical tumor, the placental portion becoming a uterine content, and is seized by the adjacent normal structures, just as any tumor is in cases of inversion connected therein."

Duncan² mentions paralysis of the fundus, or a portion of it, probably of the placental site, as favoring the occurrence, and that the tumor formed by the portion projecting into the uterus is seized by the adjacent contracting segment of the uterus and is pushed down and expelled through the os uteri. "Some part of the uterus must be in a position to be seized by the remainder." Crampton says: "However it may occur, the fact remains that the uterine inertia of the fundus or of some adjacent portion of the body is the prime factor in the inception of all forms of uterine inversion; that it is probable that the placenta is not implanted, in even a majority of instances, at the fundus; that inversion, as a rule, commences above."

As long as traction upon the cord is credited with producing the majority of inversions, it will be necessary to accept the theory of "paralysis of the placental site." According to Dr. Busey,³ fundal and lateral inversion takes place by the process of invagination; the cervical by the process of eversion beginning at the os externum. Reeve⁴ describes the latter process as beginning with pouting of the cervix, then its eversion, with rolling out of the body and afterwards of the fundus.

To the late Dr. I. E. Taylor we are indebted for the description and mechanism of this form of uterine inversion.

¹ "Amer. Syst. of Obst."

² Edinburgh Med. Jour., May, 1867.

³ "Amer. Syst. of Gynec."

⁴ Gynec. Trans., vol. ix.

Inversion beginning at the cervix is probably rare. Dr. Duncan says: "The uterine cervix has no important part to play in the production of inversion, complete uterine inversion being a condition of the body of the uterus."

Inversion begins at the end of the second stage of labor in the majority of instances, the powerful expulsive efforts favoring it. It is generally completed immediately after the completion of the third stage, occasionally before the placenta is detached. In some cases inversion is not discovered until some days have elapsed, yet an unnoticed depression existed either in the fundus or some part of the uterine walls.

Crosse says "the depression of one day may amount to introversion on the next day and to complete inversion on the third."

In the study of the following case we may possibly learn something of the cause and mechanism of this grave accident.

Mrs. S., age 23, blonde, healthy, of good physique, married; one child four years of age; no miscarriages; first labor normal, very small child, amniotic fluid abundant; made a good recovery. Nothing abnormal with second pregnancy, except that she "carried her child very low." Had false pains four weeks before labor set in, lasting a part of one night. Was taken in labor March 27th, 1890. Pains not severe and rather irregular. Uterus anteverted, nearly impossible to reach os externum. Anterior wall slightly sacculated. Position and presentation of child normal. Engagement of the head at the superior strait was delayed, owing to the position of the uterus. Labor lasted thirty-six hours, but was not severe. During first stage patient was sometimes on her feet, sometimes kneeling on a rug before the fire with a chair in front, but generally in bed. Second stage lasted about two hours, during which time patient remained in bed. Expulsive pains were not severe, and the perineum escaped unhurt. Child born asphyxiated, and I spent five or ten minutes in establishing respiration, and again returned to the mother. (However, I did not leave the mother until I had noticed the "following down" of the uterus after expulsion of the child.) In returning to the mother, she said her pains were coming again and that she felt like bearing down. I encouraged her to "bear down"; that she was expelling the after-birth without my assistance. I placed my

hand over the abdomen, felt the contractions of the uterus, but made no compression whatever. I did not touch the cord. With no unusual effort she expelled the placenta, and, without moving my left hand from the abdomen, I placed the placenta in a vessel held by the husband. A moment or two passed and she again complained of slight pain and an inclination to bear down. Thinking that there was a clot left behind, I encouraged her to make an effort to expel it also. During this effort I distinctly felt the uterus leaving my hand and descending toward the pubes. I commanded her to cease straining immediately, but she could not do so. As the uterus descended it did not lose its globular shape. There was no cupping. The abdominal walls were so much relaxed that I would have detected a very small dimple in the fundus. It simply receded from my grasp without changing its shape, and the descent was not interrupted until it passed below the pubic arch and could no longer be felt above. I realized what was taking place, and when the uterus had descended below the arch I made an effort to introduce the right hand into the vagina, and met the descending uterus just at the vulvar outlet, it giving to the fingers an impression resembling that made by the descent of a fetal head at about the seventh month. Hemorrhage was not excessive. I succeeded in restoring the organ without changing my position. I first formed my fingers into a cone, but was unable to indent the fundus; but by separating the fingers and forming a cup-like circle of about one and one-half inches in diameter, I succeeded by steady upward pressure, and at the same time making compression of the fundus, in forcing the uterus upward. The fundus passed through the external os uteri without changing its shape, maintaining its globular character until reposition was nearly completed. The cupping of the ascending uterus could be distinctly felt by the left hand over the abdomen. In pushing up the fundus my fingers came in contact with a constriction which I at first mistook for a contracted cervix, but after a careful examination found to be a complete intussusception of the uterine walls, the invaginated portion comprising the entire circumference of the uterus. The location of this intussusception was, as nearly as I could determine, at the junction of the middle and lower third of the uterus, and was symmetrical. After the fundus passed

this constriction there was no trouble in dimpling and carrying it up to position. After restoring the fundus and trying to grasp it with my left hand, I waited until I felt contractions, and then, partially withdrawing my right hand from the uterus, I discovered that the invaginated portion had not been released, that the uterus was following my hand down, and that if I removed it reinversion would occur. I made several attempts to retain the fundus in position, and finally succeeded by making pressure upon it with the tips of my fingers while the thumb pushed up the invaginated portion. Twice I am sure that I distinctly recognized a sliding down or an extension of the invagination, the fundus following without depression being detected externally. Patient could not control the effort to bear down until complete reposition had taken place. I think chloroform would have assisted me greatly, but, with one nurse and an asphyxiated baby, I did not have much assistance, and after partially restoring the organ I was afraid to desist until replacement was complete. Patient made a good recovery; was up on the eleventh day. I drew off the urine the first day and evacuated the bowels with an enema; no other treatment.

Thinning of the lower uterine segment takes place in all normal labors. Rupture of the uterus occurs as a result of excessive thinning of this portion. Partial rupture or laceration of muscular fibre may take place without giving rise to symptoms that can be readily appreciated, a flabby condition of the uterine walls being the only indication that the muscular tonus has been impaired—an injury similar to that produced by the operation of divulsion of the sphincter ani. Dr. Scott,¹ of San Francisco, mentions a case of reduction of an inverted uterus of eight months' standing, in which he distinctly felt the tearing of muscular fibre. When the organ was replaced it remained open, admitting four fingers up to the fundus, and this condition remained until surgical means were resorted to in order to close the rent; the flabby condition of the organ being the only symptom of a rupture that he recognized at the time that it was taking place.

The sacculated condition of the anterior wall mentioned in my case was favorable to rupture, and partial rupture pos-

¹ AMER. JOURN. OBST., vol. xvii.

sibly occurred, yet I have no evidence of that fact. But that excessive thinning of the lower uterine segment is a cause of inversion of the uterus I think fully as reasonable as that it should lead to uterine rupture. Excessive stretching of muscular fibre temporarily destroys its power to contract.

Paralysis of the lower uterine segment, with normal contractions of fundus and body, could readily produce an invagination, which expulsive effort would convert into complete inversion of the organ. This paralysis may not affect the lower segment in its entirety, but may be confined to any portion of it. In my case I think that only the upper portion of the segment, corresponding to the contraction ring of Schroeder, was implicated; no eversion of the external os could be detected.

The attachment of the placenta was fundal and nearly central, as nearly as I could determine by the condition of the internal walls. There was no paralysis of the placental site in this case. There was a paresis of the entire circumference of the uterus below the placental attachment, in my opinion due to the excessive thinning of the lower uterine segment, and at this point the inversion began by the process of invagination.

The diagnosis of inversion is not difficult, and the physician who leaves his patient without being assured that inversion, either partial or complete, has not occurred, has grossly neglected his duty. Newnham says: "If the practice were invariably adopted of examining carefully every recently delivered woman, both through the abdominal parietes and per vaginam, in time chronic inversion of the uterus would be known only by description."

Can inversion of the uterus be prevented? Complete inversion may be prevented if partial inversion is recognized. Had I made the least traction upon the cord, I would have added another to the list of inversions occurring as a result of undue traction. Had I followed Credé, I would have been accused of immoderate compression of the fundus, or immoderate pressure over the abdominal walls, or probably sheer awkwardness. Had I followed the expectant method, I would have been blamed for doing nothing. I am satisfied that inversion of the womb is not caused by either traction upon

the cord or by expression in half the cases where these factors are made responsible for the accident; fourteen per cent of cases reported have followed spontaneous expulsion of the placenta, and if the expectant method had been followed the percentage would have been much greater.

Traction upon the cord will not produce inversion; it will simply complete the process when it has already begun, or it will hurry it in cases that would eventually invert. Expression is more likely to produce dimpling of the fundus, after the detachment of the placenta has taken place, than traction upon the cord. Credé condemns his own method.

The prompt recognition of the trouble has much to do with the prognosis. The longer the inversion has existed the harder will it be to overcome. I shall not offer anything as to treatment further than is indicated by the report of this case.

The physician who successfully manages one case is apt to take unto himself undue credit for his method of treatment. What the attendant most needs in this emergency is common sense. In seven hundred and eighty-seven deliveries occurring in private practice, I have met one case of inversion of the uterus. My experience, therefore, is not of much value. In a similar case similar methods would probably succeed. If the mechanism of the displacement could always be known, its replacement would be easier. The opportunity to study its mechanism is not often afforded as in the case reported.

I offer for your criticism the following conclusions:

1. Traction upon the cord does not produce inversion of the uterus; it facilitates it in cases where inversion is inevitable.

2. Inversion of the uterus is preceded by a paresis of some portion of the uterine wall.

3. That paresis most frequently results from excessive stretching or laceration of muscular fibre, and is not governed by the location of placental attachment.

4. Excessive thinning of the lower uterine segment favors inversion of the uterus by temporarily impairing or destroying the power of muscular tissue.

5. When paralysis of the lower uterine segment exists, either spontaneous expulsion or expression of the placenta will be more apt to produce inversion than traction upon the cord.

AN ATTEMPT TO PERFORM HYSTERORRHAPHY BY STITCH-
ING THE RETROFLEXED UTERUS TO THE AB-
DOMINAL WALL WITHOUT OPENING
THE ABDOMEN.

BY

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It is only during the past few years that the operative treatment of intractable cases of retroflexion of the uterus has been prominently brought forward and thoroughly discussed. We may divide these cases into two great classes, according as the displaced uterus is adherent or free; each of these classes, under certain conditions, demanding a totally different method of

TREATMENT.

In view of the careful and scientific work of Olshausen, Sänger, Kelly, and others, there can no longer be any question as to the propriety of opening the abdomen, breaking up adhesions, and stitching the retroflexed uterus to the anterior abdominal wall; and the technique for these cases, especially in Kelly's new method of using the ovarian ligament as the means of attachment, leaves little to be desired. Where, however, the retroflexed uterus is freely movable, it would seem that some simpler operation than laparotomy was indicated. Unfortunately, however, the history of the operation proposed for this class of cases still leaves much to be desired.

Rabenau's method of exsecting a triangular piece from the anterior portion of the cervix has shown itself of no avail.

The Adams-Alexander method is uncertain and unscientific, and seems to be rapidly falling into desuetude; and the only operation appearing to fulfil its purpose is that of Schücking, who now (*Centralblatt f. Gyn.*, 1890, page 123) reports 42 consecutive successful cases.

In this procedure (*Centralblatt f. Gyn.*, 1888, page 181), after emptying the bladder, the uterus is thrown forward and a hollow, curved instrument concealing a threaded needle is introduced into its canal. The anterior fornix is then pressed up

as high as possible, and the needle thrust through the uterine wall and fornix at the highest possible point into the vagina. The thread is then caught, and the needle and its carrier removed, when the end of the thread piercing the vagina is tied to that hanging from the cervix. This suture is allowed to remain in place six to eight weeks, when it is removed and a pessary is introduced. This operation has not as yet found any general acceptance in this country. It appeared, therefore, that Kelly had discovered the ideal method when, at the last meeting of the American Gynecological Society, in the discussion on Dr. Polk's paper on the surgical treatment of the posterior displacement of the uterus, he stated that in three cases he had raised the *freely movable* retroflexed uterus and stitched it to the anterior abdominal wall, without making any incision at all (Transactions American Gynecological Society, 1889, page 265; and AMERICAN JOURNAL OF OBSTETRICS, 1889, page 1068, with figures).

Dr. Kelly has kindly asked me to write an account of this operation, recording the cases operated upon, showing that, like the other operations for this class of cases, it has failed to accomplish its purpose.

METHOD OF OPERATION.

The patients were prepared as for laparotomy, with daily baths, the bowels being well opened, and abdomen and vagina repeatedly and thoroughly cleansed before the operation. At the time of operation the bladder was emptied, the external genitals shaved and thoroughly washed, and the abdomen cleansed at first with distilled water and soap, then with 1:1,000 sublimate solution, and finally with distilled water.

The technique of the operation is this:

The patient is placed on her back, with her buttocks at the edge of the table and her legs hanging down over the knees of the operator, who is sitting between them in a position similar to Martin's in laparotomy. By bimanual manipulation the uterus is brought forward into a position of sharp ante-flexion, and, with two fingers in the vagina, its posterior face is pressed hard against the abdominal wall just above the pubes. By increasing the pressure from the vagina, the posterior surface of the uterus is readily recognized, pushing up

the abdominal wall into a visible hillock just above the symphysis.

While an assistant presses away the intestines from the posterior surface of the uterus with the ulnar border of his hand, the operator, with his left hand still in the vagina, makes a broad sweep with a very large curved needle, held in the right hand, through the abdominal walls, through the fundus of the uterus, and out again on the other side. A silkworm-gut ligature is then drawn through, and a second one passed in the same manner; the ligatures are then drawn up tightly and shotted, when the uterus can be readily felt suspended. To prevent the shots from burying themselves or ulcerating through the skin, a silver plate with several slots at each end, or coins the size of a dime with slits in them, are placed under each shot.

The wound is then dressed with iodoform and boracic acid (one to eight) and sublimate cotton, the vagina packed with iodoform gauze, and the woman put to bed for two to three weeks, at the end of which time the ligatures are removed and a pessary introduced.

The *rationale* of the operation is that a small amount of adhesive peritonitis is set up at the suture holes, and thus the apposed posterior surface of the uterus becomes adherent to the abdominal wall, either permanently or at least long enough to allow the uterus and its supports to regain their normal tone; after which the adhesions become unnecessary. Manifest *a priori* objections to the operation are the following:

The danger of wounding the intestines, of wounding the bladder, of hemorrhage from a perforated vessel, and lastly, in common with all operations by which the uterus is attached to the abdominal wall, of making of the uterus an abdominal organ.

By emptying the bladder, and by the careful pressure above the uterus, pushing away the intestines, the first two accidents are easily avoided. In no case has there been any serious hemorrhage.

Finally, those who object that these operations transform the uterus into an abdominal organ apparently lose sight of the topographical relations of the pelvis, forgetting that the pelvic brim is inclined at an angle of at least 45° to 50° to

the horizon, and that an organ is pelvic as long as it is below the plane joining the upper border of the symphysis and the sacral promontory, instead of a plane projected perpendicularly downward from the upper border of the symphysis, according to which all the pelvic organs except the bladder would be abdominal. The following cases are intended to show that, in spite of its apparent promise and simplicity, the operation has not succeeded, and therefore must be abandoned.

CASE I.—March 13th, 1889, Mrs. K., age 41, VII para, youngest child 5 years; labors non-instrumental; two miscarriages, the last one year ago; menses monthly, five to seven days, profuse and painful; leucorrhea between the periods.

Complained of constant aching pain in lower abdomen since the fourth confinement, and severe pain on defecation, with occasional straining and bearing down. On movement, marked pain in both ovarian regions. Examination showed the vaginal outlet greatly relaxed, with the uterus retroflexed and movable.

The vaginal outlet was repaired, and at the same time the uterus was replaced bimannally and stitched to the anterior abdominal wall by a single silkworm-gut suture, as above described, in the presence of Dr. Mann, of Buffalo.

The suture remained in place two weeks, the patient, however, remaining in bed for five weeks, at the end of which time the outlet was perfect, but the uterus had dropped back into its old position.

CASE II.—Mrs. L. H., age 24 years, III para, youngest child 19 months; free leucorrhea. Complained of chronic diarrhea since first confinement, with aches and shooting pains through the entire abdomen, but worse in the left ovarian region.

Examination showed marked relaxation of the vaginal outlet, and the uterus sharply retroflexed, with its fundus lying in Douglas' pouch below the level of the cervix. In April the outlet was repaired with perfect success, and a month later the uterus replaced and a ring pessary introduced. This, however, did not preserve the uterus in the desired position, so on two separate occasions the uterus was stitched to anterior abdominal wall in the manner described. No anesthesia was given the last time. In each case the operation failed,

and the uterus soon returned to its original position in spite of the assistance of a pessary.

CASE III.—Mrs. W., age 28, married seven years, IIIpara, no miscarriages, presented the following conditions:

Marked relaxation of the vaginal outlet and deep laceration of cervix. Uterus sharply retroflexed, with the fundus lying close to the end of the sacrum and caught between utero-sacral ligaments.

In June, 1889, the perineum and cervix were repaired, and at the same time, after emptying the bladder, the uterus was anteverted and attached to the abdominal wall just above the symphysis by a single silver-wire suture, which was then shot and a silver plate placed beneath the shot. The perineal and cervical operations gave perfect results, but within a few weeks the uterus had dropped back into its old position.

The three cases just recorded were operated on by Dr. Kelly in Philadelphia.

CASE IV.—L. R. entered Johns Hopkins Hospital Dispensary January 13th, 1890, with the following history:

Age 28, married ten years, IIpara, youngest child 7 years; menses monthly, lasting five days, profuse, with slight pain. Complained of profuse leucorrhea, headache, nausea, constant pain in lower abdomen, and bearing-down pains on walking.

Examination showed vaginal outlet greatly relaxed, hymen completely obliterated except in lower half of left side. Cervix high up behind symphysis, with the movable uterus resting on the lower portion of sacrum. Prolapsed ovaries on both sides distinctly felt; flattened pelvis; conjugata vera, 9 cm.; dist. spin. ilii, 22 cm.; dist. crist., $17\frac{1}{2}$ cm.

Operation January 29th, 1890. Uterus replaced bimanually and stitched to anterior abdominal wall as above by two silk-worm-gut sutures, which were shot and supported by the silver plate. The perineum was then repaired by a modified Emmet operation.

The convalescence was normal and the patient complained of little or no discomfort.

The sutures through the fundus were allowed to remain in place for three weeks, when the uterus was found in perfect position and adherent to the abdominal wall. On February 24th the vaginal sutures of the perineal operation were re-

moved, the vagina packed with iodoform gauze, and the patient dismissed to return to the dispensary, where a small Peaslee ring pessary was introduced.

The woman was examined on several occasions, and as late as March 25th the uterus was still in good position. But on her next appearance, a few weeks later, it was found retroflexed, having fallen back in spite of the pessary.

CASE V.—R. G. entered the hospital February 24th, 1890, age 28 years, married three years, Hpara, youngest child four months. Labors easy, except the first, which was instrumental. Menses normal, somewhat painful since marriage. Profuse leucorrhœa since marriage; uncertain gonorrheal history. Bowels regular. Frequent micturition; obliged to rise five to six times at night. Complained of constant pain in back and both ovarian regions for last three months, aggravated on motion.

Examination revealed vaginal outlet moderately relaxed, with scar tissue in posterior vaginal wall; slight cysts and rectocele. Cervix low down, resting on posterior vaginal wall, bilaterally torn, lips everted.

Uterus retroflexed and movable, with fundus curved back over cervix and resting on the lower part of the sacrum. Sense of resistance on left, great sensitiveness on the right side. Mitral systolic murmur. Operation March 6th, 1890. Uterus replaced bimanually and stitched as above to anterior abdominal wall by two silkworm-gut sutures at a distance of one centimetre apart. The perineal operation was postponed at this time owing to a diphtheritic patch on posterior vaginal wall. The convalescence was perfectly normal, save that on several occasions the urine was tinged with blood.

The sutures were removed at the end of the third week, when the uterus was found forward and apparently adherent to the abdominal wall. When the woman was examined three weeks after the first operation, just previous to repairing the perineum, the uterus was shown to have fallen back, and accordingly it was once more replaced and a single silkworm-gut suture passed, taking a much larger bite of uterine tissue than ordinarily. This was followed by a modified Emmet perineal operation. In one week the outside perineal stitches were removed—perfect union; and four days later the stitch through fundus, owing to pain and a slight rise of temperature,

A slight amount of suppuration was found at the lower end of suture tract. The woman left the hospital about ten days later, with the uterus again fallen backward.

From the cases just recorded it will be seen that the operation has been performed seven times in all, two patients having been operated on twice. In every case the final result was the same—failure to preserve the uterus in the desired position. Theoretically, all the cases operated upon were eminently suited for the method, and the mechanical part of the operation was as perfect as could be desired, but the results were so discouraging that Dr. Kelly has abandoned it.

In cases, therefore, in which the pessary is useless, abdominal section should be performed, and the uterus raised and attached to the abdominal wall by one of the well-known methods.

The first three cases here recorded were subsequently operated upon by Dr. Kelly, who suspended the uterus from the anterior abdominal wall by means of the ovarian ligaments, and in each case the result was perfect and abiding.

NOTE.—The above attempt to perform hysterorrhaphy without opening the abdomen promised at first to yield very important results. I am, therefore, very anxious, after having fully tested the method, to record the results and discourage any further attempts. I am indebted to Dr. Williams for his clear, concise report of the cases.

H. A. KELLY.

CORRESPONDENCE.

DR. KRUG'S CASES OF VAGINAL HYSTERECTOMY.

TO THE EDITOR OF THE AMERICAN JOURNAL OF OBSTETRICS.

DEAR SIR:—In looking through the June number of your esteemed JOURNAL I find a short paper published which I read before the New York Obstetrical Society on March 18th. As the proof sent me was not received, I was unaware that the tables belonging to it had been omitted. Will you oblige me by giving them in your next issue as enclosed?

Respectfully yours,

FLORIAN KRUG.

NEW YORK, June 20th, 1890.

[We append the tables as desired. See next page.—ED.]

SEVEN CASES OF VAGINAL HYSTERECTOMY FOR MALIGNANT DISEASE OF UTERUS, BY DR. FLORIAN KRUH.

Case.	Age.	Symptoms.	Diagnosis.	Date of Oper.	Remarks on Operation.	Subsequent History.	Present Condition.
1	25 years. I para.	Severe hemorrhages; fetid discharge; violent pains; rapid loss of strength.	Very soft, rapidly growing sarcoma of cervix.	June 16, 1888.	Ligatures.	Uninterrupted recovery. Perfect health for five months, then recurrence. Death 2 months afterward.	
2	38 years. III para.	Continuous metrorrhagia for four months, causing great weakness.	Epithelioma of cervix involving part of vagina.	April 17, 1889.	Ligatures.	Good recovery; a small recto-vaginal fistula due to sloughing, closed up without surgical interference four weeks post op.	Seen a few days ago. No recurrence. Perfect health. Has gained 30 lbs.
3	35 years. operative.	Menopause at 50, metrorrhagia for three years past; fetid discharges; severe pain.	Carcinoma of body of uterus.	April 20, 1889.	Operation very difficult on account of narrow vagina and large uterus. Ligatures.	Uninterrupted recovery. Seen a few days ago. No recurrence. Perfect health.	
4	45 years. VII para. 2 ab.	Hemorrhages; discharge; pain.	Epithelioma of cervix.	May 10, 1889.	Hemorrhage difficult to control; ligatures and clamps used.	On third day sudden rise of temperature. Death from peritonitis on the sixth day post op.	Autopsy: Blood clots undergoing septic changes were found in the pelvis.
5	42 years. operative.	Fetid discharge; pain; great coxalgia.	Epithelioma of cervix.	July 8, 1889.	Operation easy. Ligatures.	Uninterrupted recovery. Seen a few days ago. No recurrence. Perfect health. Has gained over 40 pounds.	
6	65 years. V para.	Fetid discharge; severe pain.	severe Epithelioma of cervix.	Sept. 10, 1889.	Operation easy. Ligatures.	Complete recovery delayed through ileo-vaginal fistula, which closed without surgical interference.	Seen a few days ago. No recurrence. Perfect health.
7	27 years. IV para.	Fetid discharge; hemorrhages; severe pain.	Incipient epithelioma of cervix.	Jan. 1890.	Operation easy. Ligatures.	Uninterrupted recovery. Seen a few days ago. No recurrence. Perfect health.	

TRANSACTIONS OF THE NEW YORK OBSTETRICAL SOCIETY.

*Stated Meeting, April 1st, 1890.**The President, JOSEPH E. JANVRIN, M.D., in the Chair.*

THE OPERATIVE TREATMENT OF POSTERIOR DISPLACEMENTS OF THE UTERUS.

In accordance with a resolution passed at the last meeting, at which Dr. Boldt read a paper on this subject, the discussion was taken up to-night. Dr. Boldt first read a synopsis of his paper, and the discussion was then opened by

DR. WILLIAM M. POLK, who said that he had unfortunately not been present to hear the entire paper read at the previous meeting. He wished first to ask the author whether the method which he had spoken of as Schultze's was not identical with that which many called Van de Warker's.

DR. BOLDT replied that it was, and, being further asked to which belonged the priority, gave it as his belief that it was Schultze's.

DR. POLK then inquired of the President whether Dr. Peaslee had not applied somewhat similar treatment, using a large sound for lifting the fixed and displaced uterus.

THE PRESIDENT said that he had done so about eighteen years ago.

DR. POLK said that such was his recollection. The credit of originating this method belonged, therefore, to this side of the Atlantic, not to the other, and it should not be known as Schultze's. But the Brandt method possessed peculiar features and deserved to be classed alone.

He believed Dr. Boldt had stated that in all cases in which he found retroversion and fixation while removing the adnexa he performed hysterorrhaphy. Dr. Boldt having replied in the affirmative, the speaker went on to say that he had not found it necessary to do hysterorrhaphy in such cases, meaning by hysterorrhaphy the stitching of the uterus to some structure within the abdomen. Instead of this operation he had adopted the plan, which he believed had originated with Mr. Tait, of simply including the round ligaments in the stump, which caused the uterus to remain in its upright position.

Dr. Polk here spoke of the question of the indications for

the removal of the adnexa, which he believed had been mentioned in the paper. He said he had strong feelings with regard to removing the tubes when they were the seat of simple inflammation and thickening, especially if they were open. Even when they were closed, and contained simply mucus and blood but not pus, it had been his custom for a considerable length of time to free the extremity, force out the contents, but allow the tubes to remain. Regarding the propriety of removing distended tubes the seat of pyo-salpinx, it was probable all present were now agreed; but in the absence of a proper pathological definition of pyo-salpinx, it was probable that a great many tubes had been removed in the past which might as well have been left in the abdominal cavity—yes, which might a great deal better, for the woman's sake, not have been removed. Many cases formerly operated upon were now known to recover without an operation.

The question of the form of hysterorrhaphy which it was best to resort to was a very interesting one. Like a good many other operators, he had shrunk from doing anything more than to bring the fundus of the uterus against the abdominal wall. But while in many cases that procedure was feasible, yet there were others in which the pelvis was too deep to permit of approximating the uterus to the abdominal wall, and if the approximation were made the sutures would cut through. We were then tempted to resort to one of the methods suggested by Säger and Kelly, and in doing so had to take the risk of the occurrence of volvulus. If one passed stitches through the cornua of the uterus, he was in danger of setting up inflammation and interfering with the calibre of the tubes. If the round ligaments were stitched at the cornua there would be like danger. He had had no experience with Dr. Kelly's new procedure of stitching the utero-ovarian ligament, but he would suppose putting strain on the ovary would be undesirable.

It seemed to him the better way was to stitch the round ligaments, an inch from the uterus, directly to the abdominal wall. This was in the line which the round ligaments would take when the uterus would rise in pregnancy.

He was satisfied that in a good many cases the methods spoken of by Dr. Boldt as Schultze's and Brandt's for breaking up the uterine adhesions were practicable. The only difficulty was to differentiate the cases in which these methods were applicable from those in which they were not. It could readily be understood that if the tube or ovary were distended with pus, there would be danger of rupture and infection of the peritoneum. Yet where there was general thickening of the structures and adhesions, binding down the uterus and adnexa, it certainly seemed that these methods deserved a

trial. If relief did not follow this treatment, one was at liberty afterward to do laparotomy. He expressed a preference for the Schultze over the Brandt method.

With regard to conservatism in cases of parenchymatous salpingitis, or that form of catarrhal salpingitis manifested chiefly by thickening of the tube, and in cases of simple cysts of the ovaries, he said there were surgeons who now would spare these organs where five or six years ago they would have removed them entire. For instance, Martin, of Berlin, who took part in the discussion of his paper read in 1887, had since then reported a number of cases treated by conservative surgery. The speaker felt that it was our duty, when the abdomen was opened and small cysts were found in the ovaries, to excise the cysts, if necessary cauterize them, and let the ovaries remain. He then had a patient in the hospital on whom he had performed laparotomy, and, being unable to determine by external inspection the state of the ovary, he had laid open the entire organ nearly to the hilus, then he stitched it up and dropped it back. The patient was getting along in a satisfactory manner, and he had no doubt the ovary could still perform its functions. [April 21st: Patient has menstruated satisfactorily and leaves the hospital to-morrow.]

DR. PAUL F. MUNDÉ said that he would confine his remarks chiefly to the surgical aspect of the subject under discussion. He thought all had recognized the fact that retroversion of the uterus did not of itself produce symptoms which required treatment. Pessaries simply relieve but seldom cure cases of retroversion or retroflexion, especially if there is a tendency to prolapsus of uterus and ovaries. So far as concerned treatment by electricity, he had had no experience with it, although some physicians here and abroad had reported good results. Nor had he tried Brandt's method, for it involved more time than he was able to devote to it.

With regard to priority of the method which went by Schultze's name, he thought that gentleman was first to describe it in detail and employ it in a systematic manner, although others may have partially applied it before. He remembered very well Peaslee's remarks on lifting the retroflexed and fixed uterus by the sound and the employment of bimanual manipulation. Dr. Mundé had only twice put patients under an anesthetic solely for its employment. In one instance it succeeded perfectly. Before using the anesthetic the uterus had been absolutely immovable, but under its influence he was able to break up its attachments with his fingers and lift it without much difficulty. At first there was apparently no reaction; a pessary was worn five or six days, but was removed because of pain, the uterus remaining in normal position. But the tubes and ovaries were found

adherent, while before raising the uterus they had been free. A local peritonitis had, therefore, followed the operation, unattended by a rise in temperature. In the other case, treated a year ago, there had also been no trouble, but the patient still wore a pessary. He doubted very much whether the method would prove applicable to any considerable number of cases.

He next spoke of Alexander's operation, which he had performed thirty-one times. In two cases he was unable to find the ligaments. These were among his first operations. In three they were found, but were so thin and weak that they broke off. He wished it distinctly understood that he regarded this as one of the rational surgical methods of treating posterior displacements of the uterus. He had already placed himself on record as favoring the operation wherever the uterus was freely movable, sharply retroflexed or retroverted, and displaced somewhat downward. *But where the fundus of the uterus, the tubes, and the ovaries were adherent, the operation was ABSOLUTELY contra-indicated.* In all the cases which he had been able to follow, perhaps twenty in number, the result had been permanent: the uterus had been kept in the normal anteverted position—in one a little too much anteverted, for it pressed upon the bladder and caused frequent desire to urinate. Several of the cases had become pregnant, gone to term, and the uterus was found, subsequent to confinement, still in the anteverted or normal position. Therefore he was unqualifiedly in favor of Alexander's operation in suitable cases. But *one* thing could be said against it, namely, that one could not say before cutting down on the ligaments whether they would prove to be sufficiently thick and strong to be serviceable.

With regard to hysterorrhaphy, he had operated seven times. In three of the cases there was prolapsus as well as backward displacement. In two the uterus was adherent to the anterior rectal wall. The first operation was performed over a year ago, the last over a month ago. All, with two exceptions, proved successful. One patient, who had prolapsus and was very stout, died apparently from intestinal obstruction—at all events the bowels could not be moved; she vomited, and died suddenly in collapse. No cause for death could be found at the post-mortem examination. The result in this case took away some of his ardor for the operation. A woman with prolapsus of the uterus should not be killed by an operation intended for its relief! In the other case of failure the operation was performed in May, 1889, and after eight or nine months the uterus was again found prolapsed; the adhesion to the abdominal wall had given way. The abdominal walls in this case were fat and flabby, and the uterus very heavy, which in part explained the bad result. Professor Müller, of

Berne, who has performed hysterorrhaphy for prolapsus oftener than any other surgeon, is not pleased with it: the results are not permanent. Dr. Mundé said he was inclined to agree with him. In the cases in which the operation was done for retroflexion with adhesions, there was no difficulty in tearing the adhesions loose and attaching the organ to the abdominal walls. In one the ovaries were removed at the same time, and the broad ligaments attached to the abdominal wall by ligature, but not enclosed in the abdominal wound as he had first intended to do. There was perfect union. In two cases there were no adhesions, but simply acute retroflexion and descensus which resisted treatment by pessaries. The uterus was lifted with the sound, and with a long, curved needle a silk ligature was passed through the fundus just behind the entrance to the Fallopian tube, while a second one was passed lower, about on line with the insertion of the round ligaments, and the organ fastened to the abdominal walls, the fundus first having been scraped raw. In closing the abdominal wound care was taken not to let the intestine fall between the uterus and bladder. The ligatures were removed after two or three weeks, or when it was feared they would cut through. A pessary was worn all this time. The result so far had been good. It was only the day before that he had seen one of the patients, and the uterus was then still in position. She was still wearing a pessary. The operation had been performed ten weeks before. He thought the uterus would be likely to adhere after being lifted by the vulsellum forceps and held in apposition to the abdominal walls by sutures, even though its surface were not freshened by scraping, but to be perfectly sure it had been his custom to scrape it.

While he thought hysterorrhaphy had a future, yet he believed we were inclined to do too much operative work for non-dangerous conditions. He would not resort to this procedure in cases in which the uterus was retroflexed or prolapsed but was movable, until he had given other measures, including Alexander's operation, a thorough trial. The last case in which he had performed hysterorrhaphy was that of a patient in whom, on cutting down on the round ligaments to do Alexander's operation, he found them so small that they could not be relied upon to hold the uterus in position.

DR. LANDON CARTER GRAY, by invitation, made some remarks on the nervous aspects of the case reported by Dr. Boldt. That it was one of true melancholia was to him an open question. One of the great difficulties which he encountered in studying the question of reflex mental disorders proceeding from pelvic troubles was want of ability to distinguish with certainty between recognized types of mental

disease and vague temporary mental impairment. A person might be depressed and down-spirited and melancholic, in the vernacular sense of that term, without having that form of cortical disease which was known as melancholia. But melancholia was a disease which could be readily recognized. The melancholia was peculiar, was usually without cause, was characterized by a very high degree of woe, usually by an intense suicidal desire, and, according to his personal observation, was usually accompanied by an aching in the back of the head and cervical region, and by obstinate insomnia. These characteristics were very distinct from those observed in ordinary melancholy, which a person may have from some hepatic disorder, or a reverse in life, or various reflexes from the viscera. It was lack of differentiation between true melancholia and ordinary forms of mental depression which cast so much doubt upon rules applied to pelvic reflexes. It had been his custom for a number of years to send all cases of mental disorder in the female to the gynecologists, and he had been disappointed again and again on being informed that there was no trouble in the pelvis, and in many cases where an operation was called for and was performed it had produced no effect whatever on the mental disease. Yet there were some cases of chronic mental disease and many of ill-defined mental depression in which removal of pelvic disorders proved extremely beneficial, and in some of these patients the best thing that could be done was to perform some surgical operation, even though there was no lesion calling for an operation. He had often observed chronic mental disorders improve after operations upon the genital organs for some very slight trouble which was quite incapable of causing mental symptoms. In this way we could account for the great number of vague reflex theories which had been put forward. The men who cut off the prepuce, the men who cut the deep urethra, the men who cut off the clitoris, the men who cut the muscles of the eye, and the men who corrected errors of refraction by glasses, all got a certain number of temporary improvements in cases of chronic mental disorder. They would get just as much improvement if they should spank the patient, or cut a piece out of his buttock, or perform any other operation which called for the administration of ether and the letting of blood, whereby hope was excited in the mind of the patient that a great result was to be obtained. A number of years ago, when he believed much more than at present in reflex disorders, a boy came to him with mental symptoms which he supposed were due to cerebral tuberculosis. He had a phimosis, which was operated upon. Following the operation the improvement in the mental symptoms was so great and lasted so long (three or four

weeks) that he concluded he had made a mistake in diagnosis. But the symptoms gradually returned, the boy died, and at the post-mortem it was found there was cerebral tuberculosis. In consultations with gynecologists he often advised an operation in order to obtain this beneficial result on the mental disorder, for if one got a stationary case of this kind the therapeutics were extremely limited. But remedies which had had no effect for a long time would frequently, after an operation, begin to cause an improvement and sometimes lead to a cure.

When it came to other cases of mental disorder than typical melancholia and mania, the removal of reflex pelvic disorders became a matter of great consequence, yet even here he had met with much disappointment. He had often wondered why it was that Mrs. Smith would come to him with certain mental disorders which he could not ascribe to any of the principal types of mental disease, and would be entirely relieved of them by an operation upon the pelvic organs, while Mrs. Jones, with the same set of symptoms and the same or a similar operation, got no relief at all.

An explanation might lie in the difference between reflexes of a pathological nature and those which kept the heart and other organs at work. The latter were regular, rhythmical reflexes, continuing day in and day out, while the former, or the pathological reflex, due to a disease in one organ which by a roundabout method affected another organ, was, *per se*, a capricious reflex and never worked in the same way in six people in a row. In one it might produce a neuralgia, in another a mental disorder, in a third a disorder of the stomach, and so on. The very essence of a pathological reflex was its caprice, and that it was which made it so difficult of treatment by palliative measures. He had seen a great many cases of mental disorder in women in asylums and in private practice, and had had careful investigation made of their pelvic organs, but he knew of no law being evolved from such studies leading to systemic treatment, and the reason for it seemed to lie in the difference existing between those regular reflexes which continued during sleep and during wakefulness and those other pathological reflexes which were essentially capricious.

DR. H. T. HANKS wished to emphasize the fact mentioned by Dr. Munde, that there was always a possibility of our patients dying during our efforts by operative measures to cure a condition which was not in itself dangerous. Yet he still believed that when the ovaries and tubes were diseased and the uterus was retroverted we were justified in opening the abdomen, raising the uterus, and fastening it in position after removing the diseased appendages.

He had witnessed Dr. Lee operate for hysterorrhaphy half a dozen times, and had operated four times himself. Two of his own cases resulted quite satisfactorily, but in the last case the last days of the woman were worse than the first. Within three weeks the uterus was again at the ostium vaginae. The first case he operated upon four years ago for complete procidentia. The uterus was fastened up by one suture, and had remained up since. In the next case he proposed to try Kelly's method and fasten the ovarian ligaments on either side of the abdominal wound. He was inclined to think it would give better results than older methods.

Dr. H. C. COE said that he had been struck by the first proposition in Dr. Boldt's paper, namely, that retroversion, *per se*, did not produce any symptoms. Mr. Tait, in the first volume of his recent work, made the statement that after removal of the tubes and ovaries it was unnecessary to break up the adhesions behind the uterus; menstruation would cease, and there would be no further symptoms. His own experience and the views expressed during the present discussion did not agree with this—in fact, if patients with retroverted and adherent uteri were kept under careful observation after recovery from laparotomy, it would be found that in a considerable proportion of the cases there were severe disturbances due to the displacement.

He understood that Dr. Boldt did not open the abdomen simply for the purpose of curing prolapsus and retroversion; it was when the displacement existed in connection with firm adhesions and well-marked disease of the appendages—the latter condition in itself demanding laparotomy—that he performed hysterorrhaphy. Another point which the author made seemed to him important, namely, that we should utilize existing supports. Dr. Coe thought that by ventro-fixation and suspension the "natural supports" were not really utilized, but that we substituted a somewhat unnatural condition. An operation recently suggested by Frommel seemed to be based on the same mechanical principle as that which obtained in the use of pessaries, *i.e.*, to make backward traction upon the cervix by shortening the utero-sacral ligaments. Byford had suggested the same procedure, and had operated four or five times with more or less success. Frommel shortened the distance between the origin and insertion of the utero-sacral folds by drawing them outward and attaching them to the lateral walls of the pelvis. In that way the cervix uteri was drawn backward and the body thrown forward. The technique of the operation had not been fully developed, but Dr. Coe thought that in time it might be regarded as a more scientific procedure than ventro-fixation, though at present its accomplishment was not devoid of danger. Schultze him-

self had pointed out how important was relaxation of the utero-sacral folds in the production of retroversion.

The speaker related a case showing the influence of adhesions, in connection with retroversion, in the production of symptoms. Four years ago he operated for retro-displacement, tearing up the adhesions, removing the adnexa, bringing the uterus forward and fixing it somewhat as Dr. Boldt had described, the sutures being passed pretty deeply into the fundus. The organ remained in position only for a few months, and the patient was entirely relieved of her symptoms; subsequently the adhesions to the anterior abdominal wall gave way and the uterus returned to a position of retroflexion, but, as it had become atrophied and was freely movable, the patient had no further trouble and has remained perfectly well. This showed clearly that the adhesions, not merely the displacement, had previously been the cause of the symptoms.

Schücking's method, which had been employed in upwards of sixty reported cases without an accident, seemed to him to be unscientific, since the uterus was kept strongly anteflexed; it was objectionable to substitute anteflexion for retroflexion. Besides, the separation of adhesions had to be accomplished entirely by Schultze's method; it was always difficult to say with certainty that there was not an adherent pyo-salpinx behind the retroflexed uterus, the loosening of which, without the intelligent use of the fingers within the cavity, might lead to serious consequences.

The speaker did not believe that Thure Brandt's method would ever become popular in this country, not only on account of the time which it required, but because American women, especially in private practice, would not submit to the peculiar manipulations.

Dr. ALLOWAY, of Montreal, present by invitation, said the method which he had been practising to a considerable extent lately in cases of posterior displacements of the uterus was Alexander's, which he preferred to call the method of replacing the uterus forward by shortening the round ligaments through the inguinal canal. His reason for adopting this method was its freedom from danger compared with other methods. He had resorted to it twenty-one times since last June, and twice before that, or twenty-three times altogether. The result had been highly satisfactory; the uterus had been held forward in every case but one. In that case, that of a young lady, the round ligaments were too small, being no larger than a knitting needle. The shortening of the round ligaments and thus bringing the uterus forward was an operation of little value when it stood by itself, independent of repair of the injured pelvic floor.

There were two conditions in which we found these displacements. One was in cases in which the woman had borne a large number of children in rapid succession; the pelvic floor had become seriously injured; the suspensory ligaments had been stretched and elongated, allowing the uterus to drop well into the pelvis, the fundus falling backward. If, in these cases, the uterus were merely suspended, it would prove effectual for a time, but within a few months, perhaps six months or a year, one would find the entire strain coming upon the suspensory ligaments; there being no pelvic floor to give support, the organ would return to its former position. But if the cervix (which was likely to be severely lacerated and hypertrophied) and the perineum were repaired at the time one shortened the round ligaments, he thought it would prove the best method for correcting the malposition of the uterus. He had always felt that we should not simply shorten the round ligaments, and then, finding that we had not obtained success, undervalue the Alexander operation.

The other cases were those of women who had borne no children, in whom the uterus was drawn backward by cicatricial contractions. Here, after keeping the patient abed for some time to relieve tenderness of the pelvic organs, he thought the replacing of the uterus and shortening of the round ligaments would prove effectual.

His success with Alexander's operation had been such that he was encouraged to make more common use of it hereafter; it certainly had a favorable future. In his hands it had been attended by no accidents except slight suppuration in two cases, but in neither did this interfere with the improved position of the uterus.

DR. A. P. DUDLEY disagreed with the statement that posterior displacement did not produce symptoms. He thought it was the experience of all that the uterus could not remain down long before its circulation became interfered with, and that was the first step toward a pathological condition. Both Mr. Tait and Mr. Hewett laid stress on that one point, and the speaker thought there was more danger in allowing the uterus to remain down than in trying to replace it by some of the methods mentioned. With regard to the comparative methods of suspension and fixation, he certainly would be in favor of suspension if it could be efficiently carried out. His own experience with fixation had been limited to three cases, in two of which the method acted very badly. The ligature which he used in one was removed six months after the operation. It had produced three sinuses into the intestine.

There was one danger connected with the operation of suspension which had not been mentioned during the discussion,

namely, injury to the epigastric arteries. Death had even resulted from hemorrhage due to injury of these arteries.

With regard to Alexander's operation, he did not believe the round ligaments were usually strong enough if there were any adhesions about the uterus and ovaries. Moreover, the peritoneum was lifted with the round ligaments, which constituted another point of traction. Dr. Dudley mentioned the experience of Dr. T. Gaillard Thomas with Alexander's operation. He had performed it in six cases, in four of which it was a failure, in two the results were good. Dr. Thomas had found the uterus retroverted in many other cases in which the operation had been performed by other gentlemen. With regard to hysterorrhaphy, Dr. Thomas was the first to perform it in this country. It was more than ten years ago. The uterus was fixed to the abdominal wall by a knitting needle passed through its fundus and supported in the abdominal wound. After adhesions had formed the wire was cut and withdrawn. In no case of hysterorrhaphy had he allowed silk to remain in the abdominal cavity. The operation was performed in such a way that after a time he could remove the silk. This, Dr. Dudley thought, was essential.

Dr. Dudley had operated by suspending the uterus a number of times, chiefly by shortening the round ligaments within the abdomen. In three out of five cases the support had given way, and the patients then wore a pessary. In one the pessary had to be introduced within a year after the operation, in the other two within six months. He presented a patient, in the early part of the evening, operated upon for posterior displacement by a method of his own, which he would describe on another occasion when there was more time.

DR. BOLDT, in closing the discussion, said the first point raised by Dr. Polk, with regard to certain conditions of the ovaries, had received his attention, but it had not been mentioned in his paper. He had resected the diseased ovary according to the method of Schroeder in several cases, with favorable results except in one instance.

He said Dr. Coe had represented him correctly when he stated that it was his custom to perform hysterorrhaphy only when there were adhesions and it was thought not wise to resort to any other procedure than opening the abdomen because of probable disease of the appendages. But there was still another class of cases in which the uterus was bound down so firmly that no other method than laparotomy, tearing up of the adhesions, and hysterorrhaphy could succeed.

With regard to the doubt expressed by Dr. Coe of Brandt's method ever becoming popular in this country, he could only say that in his own experience, when patients were

given a choice between an operation and local treatment by this method, they invariably chose the latter. The only objection to it was that it required a long time, and only well-to-do patients could remunerate the doctor for his trouble.

In reply to one of the criticisms offered by Dr. Dudley, he still held it true that posterior displacement in itself did not give rise to symptoms. It was the pathological conditions to which it gave rise that caused symptoms.

With regard to the question of real melancholia existing in his case, he said the patient had been ill a long time; her symptoms of melancholia were quite pronounced; she had left her home at times, and on several occasions had attempted suicide, and had even been confined in an asylum. At the same time she had pelvic trouble, and when she underwent local treatment and wore a pessary her mental symptoms improved, but returned when the pessary was removed.

With regard to utilizing the natural supports, he had made special mention of that subject in his paper, and expressed the opinion that ventral fixation should be resorted to only when the natural supports were not in sufficiently good condition—when sufficient muscular structure was not left in the broad or suspensory ligaments, etc., to lead one to suppose they would be able to maintain the uterus in the improved position in the future. He also stated that a pessary should invariably be worn for a time after the operation. Just how long he was unable to say. One of his patients wore it only three months, and she remained well.

Dr. POLK said he did not know that the paper called for discussion upon any other treatment than that which involved laparotomy, but since Alexander's operation had been mentioned he would say that he had performed it between fifty-five and sixty times, while he had done hysterorrhaphy, or utilized the uterine supports in some other way, about twenty times. He could say this for Alexander's operation, that in properly selected cases it would give as good results as any, if not better.

Dr. A. P. DUDLEY read a paper on

THE CESAREAN OPERATION, WITH THE REPORT OF A CASE.¹

Discussion was postponed until the next meeting.

¹ See original article, page 712.

Stated Meeting, April 15th, 1890.

The President, JOSEPH E. JANVRIN, M.D., in the Chair.

ENLARGED VULVO-VAGINAL GLAND.

DR. A. H. BUCKMASTER presented a tumor, the size of a hen's egg, removed from the region of the vulvo-vaginal gland in a patient, aged 45, who had been sterile. The tumor had caused some trouble, making intercourse rather painful. He did not know its exact nature, and requested that it be examined by the pathologist. The patient had been seen in consultation with Dr. George Westbrook.

DR. W. E. BULLARD said that several years ago he enucleated a tumor of about the same size from the same locality on the left side, the operation being attended with considerable hemorrhage. It recurred, and a second operation was performed after about six months, when Dr. Hanks expressed the opinion that it was an epithelioma. The first time Dr. Bullard had regarded it as a fatty tumor.

MODIFIED CLOVER'S CRUTCH.

DR. BUCKMASTER presented an obstetrical crutch which he had used for some time with a great deal of satisfaction. It consisted of a long, double piece of ticking, about three inches in width, with a loop at one end which was passed over one leg, the other end being carried over one shoulder, under the other arm, and finally fastened around the opposite leg with safety pins. It was useful in obstetrical and gynecological operations, and took but little room in the bag.

DR. BACHE McE. EMMET said that when the thighs were drawn up extremely it interfered with operations on the perineum and vagina by putting the perineal structures on the stretch. He would suppose that this action of Dickinson's sheet and the crutch presented by Dr. Buckmaster would render greater the liability to tear the perineum in obstetric cases.

DR. R. A. MURRAY asked whether there was any more tension on the perineum when the legs were drawn up over the abdomen, provided the knees were not separated, than when the legs were straight. He thought it was separation of the legs that caused the tension on the perineal structures. It used to be the custom in Bellevue Hospital to keep the knees together during the expulsion of the head, but they were raised at the same time, and the patients seldom had a laceration. But if the legs were held up and the knees separated, the perineum was stretched, and this he believed to be a frequent cause of laceration. He had seen nurses let the pa-

tient's legs suddenly separate just as the head was crowning, and the perineum tore as if cut by a knife. And in perineorrhaphy, if one kept the legs together while raised, the operation would not be interfered with by tension of the perineal structures.

DR. BACHE EMMET said he had not made observations in obstetric cases, but that in gynecological operations one would observe on raising the limbs that the glutei muscles were put on the stretch, the vaginal canal was lengthened, and the perineal muscles rendered taut.

DR. BUCKMASTER thought the criticism made by Dr. Emmet would hold only where the forceps remained on during expulsion of the head through the perineum. It was his custom to remove them at this stage, but the crutch could be used with the legs down; it was not necessary to draw them up over the abdomen. They could be carried to one side by adding another strip to the crutch.

ASEPTIC SCALPEL HANDLES.

DR. CHARLES JEWETT presented a scalpel in which the handle was made lighter and easier to hold by longitudinal ribs. It was at the same time easy to cleanse with the brush. It was made by Tiemann & Co.

ANOMALOUS POSITION OF THE FALLOPIAN TUBE.

DR. BACHE EMMET exhibited a drawing of a Fallopian tube which he had removed from the inguinal canal. The woman had borne children, and during the labors some lesions had occurred, but none of special significance. She sought medical advice on account of a tumor in the groin, which, although not very painful, became tumefied and caused some discomfort during menstruation. It seemed to be an ovary, and on removing it he still had the impression that it might be a cystic ovary; but on examination by the pathologist it proved to be a Fallopian tube, doubled upon itself, which had found its way down the inguinal canal to the external ring. It had cystic pouches along its course and seemed about to undergo papillomatous change.

TUBAL PREGNANCY; ELECTRICITY; DISCHARGE OF OVUM BY THE UTERUS.

DR. BACHE EMMET also presented the unruptured membranes of a tubal pregnancy discharged per uterus after use of galvanism. He had attended the woman for a number of years, and once had occasion to repair the cervix and perineum. She had borne two children and there had been one miscarriage. Fearing she might again become pregnant, she

had kept him informed of events. She had last menstruated January 16th, 1890. She thought she might have become pregnant about February 12th, and when the flow should have come on, February 16th, there was none. She came to Dr. Emmet February 25th, saying she felt some hot pains about the breasts, some queer sensations in the pelvis, considerable headache, and thought conception might have occurred. He made careful examination, and could find no indication whatever of enlargement of the uterus; nor would this be expected, since she had missed only one period. She came again March 3d, when he told her again pregnancy was not evident, although it was possible; it was too soon to recognize anything by touch, and the symptoms might be due to nervous apprehension. She returned March 17th, when her subjective symptoms were more marked, but there was no enlargement of the uterus at all, and Dr. Emmet felt so positive that pregnancy was not present that he allowed himself to pass the sound. As she was about approaching the time for the menstrual period, he gave her emmenagogues and instructions how to bring it on. She returned March 24th, not having had any flow, and he then discovered a small globular mass to the left of the uterus. The uterus itself was a trifle enlarged. Still confident that there was nothing within the uterus, he made the diagnosis of ectopic pregnancy. For his own satisfaction he passed the sound again. It entered nearly three inches. No pain, no blood, no disturbance followed its use. So positive was he of the diagnosis that he applied galvanism, fifty milliamperes. He saw the patient again March 28th, and again applied fifty milliamperes; but this strength being excessively painful, it was reduced to thirty milliamperes. The mass became appreciably smaller, and April 4th the uterus was somewhat broader, but not increased in depth. The sound was passed at each visit, and again April 8th. On the last occasion the uterus measured three and a half inches; the sound showed no discoloration. The applications of galvanism had decidedly reduced the mass in the left tube. He saw her again on the 11th, and was of opinion that if galvanism was to prove of any benefit it had already accomplished it. The mass was not where it had been; it had migrated toward the uterus, and was supposedly about to pass down through the horn. Where the large mass had been there was only a small body the size of an almond. The 13th a few shreds passed from the uterus, and she sent word that her menses had appeared. The 14th, or the day previous to the meeting, there was increased flow and considerable pain. Last night he was sent for, and the nurse told him there had been considerable flow; the patient felt pains as if in labor, and had passed a mass which he found to be the unbroken sac and ovum. It

was excessively large for the duration of pregnancy, was of the shape of the uterus, evidently was composed largely of clot, and had been retained until it had assumed the shape of the uterine cavity. The presumption was that it had been forced out of the tube into the uterus; there a clot had formed about it and it escaped as one mass. This afternoon the patient had had considerable pain and passed the decidua, which is also presented. The speaker thought the case one of unusual interest.

DR. JEWETT remarked that the case was one of peculiar interest, as going to show that the ovum contained in the tube could be expelled into the uterus. He knew of no case on record in which this fact had been so positively proven. The galvanic current was probably responsible for the expulsion by setting up peristaltic action in the tube; and while the result in this case proved fortunate, yet in another it might enhance the dangers.

DR. BOLDT was of the impression that three or four years ago Dr. Garrigues had reported a case in which the faradic current had caused a tubal pregnancy to become uterine.

DR. GRANDIN inquired of Dr. Emmet whether this was supposed to be a case of tubal pregnancy or an interstitial pregnancy.

DR. EMMET replied that the distance of the mass from the uterus when he first observed it led him to the belief that it was a tubal pregnancy. It was situated at first fully an inch distant from the horn of the uterus. Later it felt as if a mere spreading out of that portion of the fundus, and it had then, he thought, become tubo-uterine.

DR. GRANDIN said it constituted then a fairly unique case. There were a number of cases on record in which an interstitial pregnancy, a pregnancy occurring largely within the muscular substance of the uterus, had been, or was supposed to have been, converted into a uterine pregnancy by the action of the galvanic or faradic current. Dr. Garrigues' case was one instance, but he believed that patient miscarried. Dr. Mundé had reported a similar case, he believed, and some had been recorded in Germany. But Dr. Emmet's was the only case, as far as he knew, in which the ovum had been made to pass from the tube into the uterus by the action of the galvanic current. He was to be congratulated on the result, particularly since it was another instance of what might happen contrary to the dictum of Mr. Tait. This specimen, according to Mr. Tait's published views, should have found its way between the folds of the broad ligament and should not have entered the uterus. According to this case, in some instances a tubal pregnancy might be converted into a uterine, and

might be made to abort by electricity, and thus primary laparotomy not be demanded.

DR. C. C. LEE said this was not the only case in which a tubal pregnancy had been converted into a uterine by the action of electricity. The President would recall the fact that one of the first cases in the city which had led to the adoption of electricity in extra-uterine pregnancy was a case of this kind. It occurred in the daughter of a noted surgeon of the city under the care of Dr. McBurney. The case was seen in consultation by a number of gynecologists, and there was considerable discussion as to the diagnosis. It was proven, as far as anything could be by clinical examination, that originally it was a case of tubal pregnancy, and that the ovum was gradually forced, as was presumed, by the electrical current into the cavity of the uterus, was expelled in that way, and the woman had remained well since.

DR. W. GILL WYLIE would like to believe the facts were just as Dr. Emmet had narrated them, yet he might have been mistaken. It could hardly be conceived how so large a mass could have passed from the tube into the uterus. There were so many chances of the tumor having been something else that he could not but feel some doubt. In pregnancy the shape of the uterus was so changed in some cases that we were very apt to make a mistake and think there was extra-uterine pregnancy. He had had three or four such cases, which had caused him great doubt. He had seen some in which the pregnancy formed a mass almost distinct from the uterus, yet by waiting and watching he had found the uterus gradually enlarge and uterine pregnancy was proven. Whether the ovum had been in the tube, or partly in it, or interstitial, he could not say, but he believed not, and that the growth of the fetus had changed completely the shape of one part of the uterus only.

He would not accept the evidence of the sound in diagnosis, unless it was used with force in order to destroy the fetus. Then there might have been enlargement of the tube of some other nature complicating uterine pregnancy, and which in some way disappeared.

DR. JEWETT asked whether the development and casting-off of the decidua entirely distinct from the ovum would not go to establish the view of Dr. Emmet.

DR. H. T. HANKS could not see why it was not possible for the ovum to develop in the tube very near the horn of the uterus and gradually find its way into the uterine cavity. He thought it likely that many persons had attempted abortion by use of the sound and failed in this class of cases, succeeding later, however, after the fetus had passed into the uterus. He believed with Dr. Wylie that in uterine preg-

nancy the uterus often developed abnormally the first two to six weeks, yet he could not see why there should not be the condition which Dr. Emmet and Dr. McBurney had described in their cases.

Dr. A. P. DUDLEY inquired of Dr. Emmet the condition of the broad ligament after the fetus had been expelled, and also related a case which he saw with Dr. North when he was an interne at the Woman's Hospital. The woman menstruated regularly, but claimed to have a tumor. They examined her carefully, but differed in diagnosis; Dr. Dudley believing that it was a case of pregnancy in the left horn of the uterus, where he felt a distinct sulcus between this mass and the uterus itself, while Dr. North thought it was a fibroid. Being Dr. North's assistant at that time, Dr. Dudley carried out his treatment, though with some reserve. He ordered ergot and applications of iodine, largely because the woman asserted that she had not been exposed to impregnation for the past year or six months, and, when pressed for an answer why, said that her husband had not deposited semen in the vagina during that time. She returned home, with the ergot and iodine continued, and in about seven days expelled a three months' fetus, and immediately afterward left her husband, declaring he had stolen a march while she was asleep. The case went to confirm the opinion that the fetus might rest in one horn of the uterus for some time, the enlargement be in the direction of the broad ligament, simulating tubal pregnancy.

THE PRESIDENT said he had presented a specimen at the meeting of the Society at the house of Dr. Thomas Addis Emmet about ten years ago, with the following history: The woman had had four children, the youngest perhaps 6 years of age. The speaker had attended her in several of her labors. She conceived again, the exact date being known to her, and six weeks later had a slight hemorrhage. This was repeated two or three times during two weeks, and she thought she was about to miscarry. On examination he found what he supposed to be a tubal pregnancy on the left side. There was an enlargement of the tube, and between this and the uterus was a deep sulcus, sufficiently large to lay his finger in on bimanual palpation. He recommended the use of galvanism, but first requested a consultation, and Dr. T. G. Thomas saw the patient with him on the following day. The speaker himself had already made two or three examinations to assure himself of the diagnosis, and the day on which Dr. Thomas saw her he again examined her first, and found that the mass had moved somewhat toward the uterus and had become purely interstitial. Dr. Thomas confirmed the diagnosis. According to his recollection, about twenty-four hours

later the decidua was passed almost perfect. No fetus was found. The patient had been just two months pregnant. She got up, went about, was perfectly well, and after two months more passed the fetus, which was decidedly flattened, was of the size of a fetus of two months, although pregnancy had taken place four months previously. He was fully convinced that it was a case of tubal pregnancy just outside the uterus, which, by simple handling, was converted into an interstitial pregnancy, and from there the fetus passed into the uterus, where it remained two months before it was expelled. The specimen was examined by Dr. Noeggerath, and, as far as it went, the examination confirmed the diagnosis. The President also remarked that the case referred to by Dr. Lee was well known to him.

DR. BACHE EMMET, in closing the discussion, emphasized the diagnostic value of the fact mentioned by Dr. Jewett, that the perfect ovum first passed and afterward the decidua. He said he had had occasion repeatedly to examine this patient, and in that way had made a careful study of her pelvic organs. Prior to the severe pain, as of labor, during which the mass was expelled, there had been minor pains, which he thought marked the entrance of the ovum into the uterus. The mass lay in the vagina a brief period after the severer pain, and was finally discharged externally without suffering. This was yesterday, and to-day the decidua had been expelled, offering conclusive proof, he thought, of the course of the case from a tubal to an interstitial and then a uterine pregnancy, as he had described it. From the passage of the sound and bimanual manipulation on this occasion, and examinations made during treatment on former occasions, he was positive there was no other condition to account for the mass as he felt it in the tube. Replying to an interrogatory by Dr. Dudley regarding the condition of the broad ligaments since abortion, he said he had not examined them for the reason that it was not yet safe to do so.

LIGATURE PASSER.

DR. CLEMENT CLEVELAND gave this name to an instrument which he presented, designed for the passing of a ligature through the pedicle of ovarian tumors, etc. It was practically a forceps with one blade shorter than the other. When closed it resembled an aneurism needle.

Postponed discussion on Dr. Dudley's paper,

THE CESAREAN OPERATION.

DR. EGBERT H. GRANDIN said he would try to answer the points raised by Dr. Dudley, not so much from personal expe-

rience as from observation, having assisted at two Cesarean sections and witnessed another. First, as to whether to operate before labor had set in, he would answer no. We wished to obtain after the operation firm uterine contractions. The uterus was not ready to contract firmly until labor had begun. Then, too, before term the placenta and decidua were not prepared to be shed, and in their removal the necessary traumatism might result in septic endometritis.

As to the kind of suture to be used, we must be guided in this country at present by the results obtained in Europe. There, for one reason or another, they had been more successful with the Cesarean section than had we, the chief reason being that they made up their minds to do this operation before the woman had become exhausted, before ineffectual attempts had been made to deliver with forceps or by version. When in this country we should make up our minds to do Cesarean section advisedly, and not as a *dernier ressort*, our success would approach that obtained in Europe. In Europe it had been found, after a severe test and trial with various sutures, that the Snger stitch was best. Deep interrupted sutures were passed, not, however, including the decidua, and many sero-serous sutures. Kehrer, among others, had already tried the continuous catgut suture similarly to Dr. Dudley's method, and had given it up. Schauta had shown by statistics that the maternal mortality was much higher where catgut was used for suture material. Further, we could not always depend on the quality of the catgut; it might produce sepsis. Cases of the kind had been reported before the Society. Again, the catgut sutures might not hold sufficiently long to get deep union, although unquestionably peritoneal union would take place before it could become absorbed. One of the chief safeguards in modern Cesarean section was the fact that we had learned how to keep the lochia in the uterine cavity from entering the peritoneal cavity, through early sero-serous union.

With regard to operating *in situ* instead of first lifting the uterus from the peritoneal cavity, he preferred the latter method. He thought it had been proven repeatedly that an additional two inches or more in the length of the abdominal incision made no special difference in the ultimate result, provided due antisepsis were observed. In operating as Dr. Dudley had done, the uterus might contract before the fetus was removed, and cause some difficulty.

With regard to the danger of the wound gaping, he thought it would depend entirely on the quality of the catgut used. If gaping did not take place within twenty-four or thirty-six hours after the peritoneal surfaces had united, he did not think it would make any difference in the result.

Dr. H. T. Hanks made some remarks on the size of the incision, when to operate, and on the technique of the operation. The tendency of the uterus to contract was no greater at the ninth month than at the eighth month, and this point should have no influence in deciding when to operate. The point which had the greatest bearing on when to operate was whether the child and mother were most likely to live when operation was done early or when it was done at term. If both mother and child were doing well, he would say wait until the ninth month. As to lifting the uterus out of the abdominal cavity before extracting the fetus, this should certainly be done if the placenta were found implanted directly beneath the incision.

Regarding the method of closing the uterine wound, he liked that adopted by Dr. Dudley, and if one were sure that his catgut was aseptic he thought there was no objection to using it. In the first Cesarean section which he ever saw performed, four silver-wire sutures were inserted half an inch apart, and were not covered up in any way. The patient died. Certainly silk or catgut would have been much more preferable. The operation as performed by Dr. Dudley was an exceedingly nice and safe one. The little additional time which it required was well spent, if the patient were not suffering from hemorrhage or shock.

Dr. CHARLES JEWETT thought the time to operate was before labor had begun. This course seemed to possess obvious advantages and no disadvantages. Experience had shown that the uterus contracts as well if the operation is performed some days before natural labor as it would at term. Drainage would be ample, for the cervical canal was large enough to admit the finger at the eighth month; or, if there were any doubt about it, a finger-thick rubber tube could be passed down through it before closing the uterine wound, to make sure there was no obstruction.

He thought Dr. Dudley's method of suturing a very good one, but it required a little more time, and one felt somewhat more secure when the interrupted suture was used than with the continuous. As to the material, as good results had been obtained at the Dresden clinic as elsewhere, and there they had used catgut prepared by the method of Mikulicz. As had been stated by a recent writer, the ideal suture material was that which would retain the parts in apposition as long as desired, and then be rapidly absorbed. It will doubtless yet be found possible by the chromic-acid method to make catgut meet these indications. At the Dresden clinic, in twenty-eight cases nearly ninety per cent of the mothers had been saved.

An incision from just below the umbilicus to within an inch

of the pubes was sufficient, the uterus being lifted out as the fetus was extracted; and while the other method might not be particularly objectionable, yet he thought it was unnecessary to make so large an incision. There need be no danger, he thought, of any material escaping into the peritoneal cavity during gradual eventration. He said, with regard to extraction, that in one case he found it easier to extract by the head, although this would not always be practicable. Only two or three seconds were consumed, and the uterus had not time to grasp the child, as so often happened, leading in some cases to an extension of the uterine wound into the lower segment, when extraction was performed by the feet.

DR. R. A. MURRAY thought Dr. Dudley was fully justified in appointing the time for the operation in this case, since it enabled him to make thorough preparation and obtain good assistants. The uterus would contract as well as at term, and, as Dr. Jewett had said, drainage could be made if the cervix were not sufficiently dilated.

As to suture material, one could certainly render silk aseptic, whereas catgut sometimes failed even when obtained from the best makers. He thought the uterus should be lifted out of the abdomen before making the incision, if possible. No matter how firmly the uterus was held up against the abdominal wall under the other method, some blood would almost surely enter the peritoneum. Then, too, one was liable under the latter method to make an irregular incision. As to liability of separation of the wound under catgut and the form of suture Dr. Dudley employed, he thought there should be no danger in this direction.

DR. BUCKMASTER said the objection which had been offered with regard to removing the fetus before lifting out the uterus was the danger of fluid escaping into the peritoneal cavity. But it had been found that a little blood, and even a little liquor amnii, was perfectly harmless in the peritoneal cavity. As to the danger of the child dying because of inability to extract the head, it had been stated that the uterus could be easily torn, and the wound enlarged with the finger to the point where the head could be readily extracted.

DR. GOELET had performed Cesarean section twice, losing one mother and saving the other. In the first case he did not expect to have to perform the operation, and consequently was not prepared. The hemorrhage was excessive; a good deal of the contents of the uterus escaped into the peritoneal cavity, and he had considerable difficulty in cleaning it out. Continued catgut suture was employed, going over the wound twice. The suture included the peritoneum and muscle, but not the decidua. The patient died on the third or fourth day of shock. Examination revealed complete union in the

line of the wound, showing that catgut was efficient. In the other case he used the rubber ligature around the cervix, turned the uterus out of the abdomen, employed interrupted catgut suture. The patient recovered without an unpleasant symptom.

Dr. H. J. BOLDT had had a bad result from the use of the rubber ligature, and he was glad to notice that it was being discarded by Säger and also by Leopold, they having found that the flow of blood to the uterus could better be controlled by the hand. He believed that lately, however, Säger advised the use of a folded antiseptic napkin thrown around the neck of the uterus. It did not make the groove which the ligature was likely to leave in the uterine tissue, nor was its use so likely to be followed by secondary hemorrhage. It was far better, in the opinion of the speaker, to use either manual pressure or the folded napkin. He agreed fully with Dr. Dudley with regard to the use of catgut.

Dr. DUDLEY closed the discussion. When he raised the question whether one should operate before term or wait until labor set in, he had in mind cases of primiparæ in whom the cervix might be long, and might contract shortly after delivery, thus keeping back the secretions and causing the wound to open by intra-uterine pressure. It was not always possible to say at just what period of pregnancy one should operate, if labor had not set in. In removing the uterus from the abdominal cavity before extracting the fetus, a long incision had to be made, rendering, he thought, the danger of hernia much greater. We should always make as small an abdominal incision as the circumstances would admit in all laparatomies.

The only bugbear which he could elicit from the members regarding the use of catgut was that it might not be antiseptic. Catgut could be rendered perfectly aseptic and reliable, and in cases likely to call for Cesarean section there could be no possible excuse for the physician not having it at hand. Silk had no advantage in this respect. It had the disadvantage of not being absorbed, and even when encysted required months to disintegrate. If under these circumstances it should prove not to be aseptic, it certainly would lead to sepsis and death, although the cause of death might be put down by the reporter as shock. Dr. Dudley thought that if a patient lived four or five days after an operation she must have recovered from shock. It was, he thought, the silk which had in such cases often caused death, and there was just as much danger of sepsis when this material was used as when one used catgut.

Regarding the danger of absorption or giving way of catgut, he said we all knew that within twenty-four hours the

peritoneum would become united firmly; that the uterus did not commence undergoing involution until four or five days after delivery. It contracted after natural delivery, it was true, but not as solidly as after being washed out by bichloride solution following Cesarean section; and therefore no hemorrhage took place.

Under these circumstances there was no traction made upon the catgut when used in the manner he had described. Catgut should never be used as an interrupted suture, for in that case, if there were tension placed upon the tissues, it would fall upon a single strand, and it might, therefore, soften and loosen; but when used as a continued suture it would not give way until union had taken place throughout the wound, if it were going to take place at all. If union was not going to take place, it would be just as likely to fail with silk as with catgut. The use of anything in the abdominal cavity which must become encysted before it became harmless was a procedure which could be improved upon.

DR. BACHE McE. EMMET read a paper on

RETROPERITONEAL CYSTS OF THE FEMALE SEXUAL ORGANS; A STUDY OF THEIR TREATMENT.¹

DR. C. C. LEE understood that the paper embraced in its practical part two points: first, the method of operating on these retroperitoneal cysts; second, the best way of securing atrophy of the growth by ligating the nutrient vessels.

Regarding the technique of the operation, he had little to say further than to approve of the statements contained in the paper. The technique of an unusual laparotomy must always be decided by the requirements of the particular case. He had had only two cases of the kind treated of in the paper, and he regretted to say both terminated fatally. In one there was a malignant growth developing from just below the left kidney, under the peritoneum, forming on its surface a large cyst which pushed the peritoneum forward. Further, the woman was at the fourth month of pregnancy. She had come on from Louisville, entered St. Elizabeth's Hospital, where she was seen two or three times with him by Dr. James B. Hunter, who also assisted at the operation. Neither of them could make a positive diagnosis, but since the growth was increasing rapidly, and it was feared would interfere with pregnancy, they concluded to make an exploratory incision and remove the growth if it were thought proper. He found the retroperitoneum pushed forward by a large mass double the size of a child's head at term. On incising the peritoneum and tapping the cyst, he found he had

¹ See original article, page 698.

entered a cancerous mass. He then ligated the base as well as he could with catgut, cut away what was possible, and drained as effectually as the case would permit, but the patient died after four or five days, without having miscarried. He removed the uterus with the contained fetus, which he once exhibited at the Society.

The second case was one transferred to his service at the Woman's Hospital from that of Dr. Thomas. Here there was a large cyst which projected downward between the vagina and rectum, and was exactly like that described in the paper. He thought it was a cyst which could be reached through an abdominal incision, he tapped, its adhesions broken up, and removal be effected. He found himself compelled, however, after getting as much fluid out of it as he could by tapping, to close the abdominal wound and complete the tapping through the vagina. He then packed it with iodoform gauze and hoped for a good result, but the patient died of a complication which he had never seen in laparotomy, namely, cerebritis. She had had headaches before, which were thought to be due simply to reflex irritation; but it seemed, from the fact that she died of cerebritis, that there must have been intracranial disease, whose significance they had not before detected. An autopsy was not permitted. The pelvic tumor was a cyst which had developed behind the peritoneum, to the right of the uterus, and sprang from the tissue of the pelvis alone, having no connection with the broad ligament.

In cases like the last one which he had related, he thought it would not be advisable to attempt drainage or extraction of the cyst through an abdominal wound. The exploratory incision should be closed before the posterior peritoneum was opened and possibility of contamination of the abdominal contents had arisen. The cyst should be drained by way of the vagina, and adhesive inflammation of its walls might be induced by injections of iodine.

Dr. Muxé had found, on looking over his records, that among 150 laparatomies there had been 14 cases of intraligamentous cysts. Of these, 9 were intraligamentous ovarian, such as Dr. Emmet referred to in particular; 1 was a hematoma of the broad ligament; 4 were true cysts of the broad ligament, that is, of the parovarium. Besides he had operated upon 4 other cases of intraligamentous hematoma by the vagina, draining and cleansing from that direction. All of these recovered. He had found the cases of intraligamentous cysts to be technically the most difficult to operate and most likely of all ovarian operations to prove fatal. Of his 9 cases of intraligamentous ovarian cysts operated upon by laparotomy, 4 died and 5 recovered. In all four that died

suppuration of the sac had taken place, and unusually firm adhesions were present between the sac wall and peritoneum, and complete enucleation was quite impossible. The broad ligament broke down so completely that it was impossible to protect the peritoneum from contamination with pus, although aspiration had been practised as soon as the site of the tumor had been made out. Death in each instance took place from septic peritonitis. In one instance the intestine became adherent to the débris of the sac, perforation followed, and the patient died of acute peritonitis.

He would be led by his experience, if he were able to diagnose an intraligamentous cyst which contained blood or pus, to make a sufficiently large incision *per vaginam* to clear out the cyst thoroughly and drain, but not so large as to endanger the vessels. This procedure he thought was safer in such cases than the very risky one of laparotomy. When, however, there had been no temperature, no history of extravasation of blood, no evidence of suppuration, he would prefer to open the abdomen and stitch the walls of the sac to the abdominal incision, having previously removed all that he could by enucleation. In five cases this method had proven very effectual. He had been enabled to remove a large part of the sac before stitching it to the abdominal wound, but in none had he been able to enucleate it entire.

He had met with two cases in which there were unusual complications. In one laparotomy had been performed twice before by a surgeon in Berlin. The patient brought a letter from him, stating the nature of the tumors, and that probably all of the second ovary had not been removed. Dr. Mundé found an intraligamentous cyst, part of which he was unable to remove. The patient recovered without difficulty. In the other case he removed two intraligamentous cysts. He attempted to enucleate the one on the right side, but, failing, he stitched the sac to the abdominal wound, and then, while searching for the ovary of the other side, found a second intraligamentous cyst, not so large as the first. The broad ligament was very lax, so that he was able to draw it up into the abdominal incision, make a pedicle of the mass, cut it off, leaving only a small portion of the cyst in the ligature. The sac of the tumor of the right side was packed with iodoform gauze after fastening it to the abdominal wall. The patient made a tedious recovery, owing to a pelvic exudation and ulceration of the rectum. On examining the rectum a dense stricture was found, which he endeavored to stretch, but, failing, nicked very lightly with the knife. On inserting his finger into the rectum, he found that the brittle wall had given way, and that an opening two inches long into the peritoneal cavity was present. He at once passed a thick rectal bougie

into the bowel past the rent, and packed iodoform gauze about it, which was removed on the third day, when the bowels were lightly moved by castor oil. The patient made a good recovery, and the stricture did not return.

Speaking of the treatment of intraligamentous hematoma, he said that he had recently found this condition in a case in which he performed laparotomy for supposed tubal pregnancy. The hematoma was between the layers of the left broad ligament; the sigmoid flexure was attached to its posterior surface, and was cut into for a distance of two inches while trying to lift the sac into the abdominal wound. The adhesions were so strong that had this accident not occurred the gut would doubtless have been included in the suture which he had intended to pass in, uniting the sac with the abdominal wound. The patient made a good recovery, but has a fecal fistula, which is now rapidly closing.

He did not like laparotomy for hematoma of the broad ligament or pelvic cavity. If a diagnosis were possible, he would prefer always to open the tumor by the vagina, clear out the clots, wash the cavity thoroughly, and drain or pack with iodoform gauze. He had cured four cases in that way, and he believed the fact that he had not lost the last one, just mentioned, on which he had performed laparotomy, might be considered very lucky. He would not like to repeat that experience.

The diagnosis of these cases he had not found to be very difficult. If one found a fluctuating tumor in the pelvis, the uterus in front, the tumor developed mostly into the pelvic, little into the abdominal cavity, only slightly if at all movable on bimanual palpation, the walls of the sac when felt per vaginam being very thick and tense, it was probably an intraligamentous cyst. It was wise, however, to aspirate per vaginam and confirm the diagnosis, and, this having been done, drain by the vagina instead of doing laparotomy.

Dr. J. R. GOFFE said he had had one case of the kind described in the paper, which proved to be the most stubborn one that had ever come under his observation in the line of abdominal cysts. Two years ago he went to Ohio, expecting to operate for an ovarian tumor, but on cutting down he found some intestines in front, and knew that such could not be its nature. He commenced detaching the adherent intestines, and after going about four inches discovered that he was stripping off the mesentery. Making up his mind that the tumor was retroperitoneal, he incised the peritoneum and began enucleation. This was continued until he got up some distance along the spinal column, and found that the most adherent portion was at the diaphragm. No serious hemorrhage occurred until he reached the upper portion, and

there a long strip of tissue was injured which contained the nourishing vessels; this he ligated with catgut. The sac was finally brought to the abdominal wound, and a large drainage tube was inserted as high up as the diaphragm. The doctor who had charge of the case wrote him afterward that he allowed the abdominal wound to heal too soon, before the sac had granulated; the patient had some sepsis, and he was obliged to open the wound and insert another drain. Afterward the patient went on to complete recovery. The case showed that one could not tell beforehand from whence these retroperitoneal tumors started. He believed that in this case it started from the diaphragm; that was the most adherent part, and seemed to be the point from which it was nourished. It followed down the large vessels into the pelvis.

DR. J. R. NILSEN mentioned a case illustrating the difficulty of diagnosis and treatment. The patient had been seen with him recently by Dr. Hanks. The tumor gave evidences of a thin-walled, unilocular cyst with limpid fluid. It was found on operation to be a tumor which in its early growth had split up the broad ligament, the latter radiating all about it and forming close adhesions. Instead of a unilocular cyst with limpid fluid, it proved to be multilocular with colloid material, the upper half constituting one cavity, the lower portion being divided into smaller sections. The smaller cavities were broken up, forming one, into which a drainage tube was inserted. The adhesions were so firm that during the course of the operation a number of rents took place, involving the mesentery, ascending and descending colon, which were repaired by fine catgut; and although he had expected to have to make an autopsy soon, yet the patient made an excellent recovery.

DR. W. GILL WYLIE said that, judging by his own experience, the kind of tumors under discussion were not so common as some had supposed. Out of about five hundred cases of abdominal tumors seen by him, only five or six were of this nature. His first case of ovarian tumor belonged to this class, and the patient died. He had sewed the tumor into the abdominal wound. Until within four or five years it was his custom always to sew a good part of the sac into the abdominal wound, but he had since found it frequently a source of trouble. Atrophy was liable to take place, and ventral hernia result. He had, therefore, abandoned that method for enucleation.

Regarding diagnosis, this was possible in some cases without opening the abdomen, but it was likely to be attended with a good deal of uncertainty, especially where the tumor had grown to a size partly filling both pelvis and abdomen. The paper had covered this subject well, and the conclusions

were in his opinion well founded. With his experience he would adopt enucleation where it could be done; but if the tumor contained pus, or was small and was shown by laparotomy not to be ovarian, he thought drainage by the vagina, or, if necessary, through-and-through drainage, was proper. Where there was any doubt about the diagnosis one should proceed at once to clear it up by exploratory laparotomy. He had not infrequently done this, and, instead of proceeding further, closed the abdominal wound and drained by the vagina.

He referred to a case in which a doctor had opened the abdomen in the median line, found a tumor as large as a man's head between the peritoneum and abdominal walls, and removed it by enucleation without opening the peritoneal cavity. Later this patient had a cyst of the broad ligament of the left side posterior to the peritoneum, which Dr. Wylie tapped by the vagina after confirming the diagnosis by abdominal incision. The safest method of treating a septic tumor of this nature, which could not be enucleated without contaminating the peritoneum, would be to cause adhesion to the anterior abdominal walls, and after four or five days open at that place and drain. He referred to a case in which, seven years ago, he assisted Dr. Sims in the removal of an intraligamentous cyst, sewing a large pedicle into the abdominal wound, while a good portion of the tumor which could not be enucleated was left below. For seven years afterward thick pus and mucus discharged from a sinus, rendering the patient's life very uncomfortable; but none of the many physicians whom she saw was willing to undertake an operation. Dr. Wylie passed a large sound down the sinus until it could be felt by the finger in the vagina, there cut down to the sound, introduced a pair of dilators, with which he enlarged the passage, and drew a large drainage tube through. After four or five months the amount of pus discharged was very small.

DR. CLEMENT CLEVELAND had had two cases of intraligamentous cyst. One occurred a year ago, in which a cyst occupied either side. He removed a part of each and ligated *en masse*. The patient got well without difficulty. In the other case he enucleated the whole cyst, but the patient died of septic peritonitis. He had also had two cases of hematoma. In one the clot had broken down into pus. He opened the abdomen, tapped the tumor, washed out its cavity thoroughly, and intended to drain through the vagina if it were possible, but found the space between the vault of the vagina and the cyst too great to make this procedure safe. He therefore stitched the peritoneal surface of the broad ligament contain-

ing the tumor to the abdominal incision, and drained. The patient recovered without difficulty.

He had had another case of hematoma in which the intestine was firmly attached to the tumor, and in trying to separate it he perforated the tumor, which contained broken-down blood clot, and also found a perforation in the intestine. This was sewed up, and the cavity of the tumor was packed with gauze, but the patient developed a fecal fistula and died in consequence.

As bearing on diagnosis he related the following case: Two years ago he saw a patient who had a tumor in the left side of the abdomen which had been growing more than a year. Her chief symptom was pain. On bimanual palpation he found a fluctuating tumor on the left side which extended down into the pelvis and gave every appearance of being an ovarian cyst. Two or three days before he operated the patient twice passed dark, offensive pus from the bladder. The diagnosis lay, therefore, between suppurating ovarian tumor or intraligamentous cyst and pyonephrosis. Laparotomy was decided upon, and when the abdomen was opened a distance of three inches the finger readily demonstrated that the tumor had no connection with the pelvic organs. It was under the peritoneum, and was a kidney the seat of pyonephrosis. It was tapped, and at least a pint of dark, disagreeable pus, such as had been passed by the bladder, was brought away. The pelvis of the kidney was then thoroughly washed out, stitched to the abdominal wall, and a drainage tube put in. Pus continued to pass for several months, but the symptoms improved at once. He decided to make a lumbar incision and, if possible, establish through drainage. This he succeeded in doing, and after six months the discharge ceased, and finally both anterior and posterior wounds healed permanently and the patient was then quite well. The operation had been performed two years ago. He should have stated that before doing laparotomy the temperature had been elevated for some time.

Dr. H. J. Bolter expressed his surprise that so many cases of the kind under discussion had been reported in which supuration had taken place. He had before supposed that he alone was the one so unfortunate as often to meet with suppurating cases, but he now found that others were no more fortunate. The suppurating cysts were the most discouraging and dangerous to manage. The difficulties which were to be encountered could only be recognized after making abdominal section, and he had found that the only course which could then be pursued without endangering life too greatly was to close the abdominal incision and drain by the vagina. In the only instance in which he did try to do anything

through the abdomen the patient died. He agreed with Dr. Mundé that the diagnosis was not so difficult until the tumor had reached considerable size.

Stated Meeting, May 6th, 1890.

The President, JOSEPH E. JANVRIN, M.D., in the Chair.

CYSTIC KIDNEY.

DR. W. M. POLK presented a cystic kidney which he removed on the 20th of February last. The patient was 38 years of age; had had for a number of years an enlargement of the abdomen, but it caused no annoyance until about two years ago, when she consulted a physician, who was disposed to think it was an ovarian tumor. She concluded, however, to have nothing done until last fall, when her general health began to fail; she became emaciated and had attacks of nausea and vomiting. These symptoms becoming more urgent, in January she considered the propriety of an operation. At that time the tumor was of about the size of the pregnant uterus at the sixth month, was principally to the right of the median line in the lower part of the abdomen, but encroached somewhat upon the left side and raised a suspicion of an ovarian tumor. The patient being a virgin, there was some difficulty in making a vaginal examination, but there seemed to be no connection between the tumor and the genital organs. At the time when the speaker examined her she had been vomiting coffee-ground material for about two weeks, was much exhausted, the pulse remained at 105 to 115, and the temperature 100° to 102° F.

On the 20th of February an incision was made at the anterior border of the right quadratus lumborum. The tumor came readily within reach of the finger, and was recognized as the kidney. It was tapped; a large amount of purulent fluid came away; the mass was easily enucleated; the ureter was secured and cauterized; the peritoneum was stitched to the edge of the wound so as to completely exclude the general cavity, the wound tract packed with iodoform gauze. The patient made a perfect recovery, and only two days ago was in his office, in excellent general health and free from all former symptoms. The extirpated kidney was degenerated and cystic, and had been so a long time, perhaps congenitally.

A CASE OF EXTRA-UTERINE PREGNANCY.

DR. A. P. DUDLEY presented a specimen with the following history. The patient was a Russian, from whom a somewhat imperfect history was obtained. She was admitted to the

hospital April 8th last; was 28 years of age, had been married at the age of 18; had one child and one miscarriage; was later a widow for some time; married again at the age of 25 and had two children, the last being eighteen months old. Her last confinement had lasted two days and two nights, but she made a good recovery. After due time she again began to menstruate, the periods being regular until nine weeks ago. Four weeks ago there was a discharge of blood from the vagina, which continued until she consulted a physician. Under his treatment the flow stopped, but the abdomen became much distended and she suffered great pain. This part of the history was somewhat indefinite, but it seemed there was no collapse. Under the use of warm douches the flow again commenced, and large clots of blood were expelled. She entered the hospital April 8th, with an appearance of anemia and suffering from cramp-like pains in the abdomen. She was nursing her child in an irregular manner, and this was discontinued. The hospital record stated that she complained of anorexia, was of constipated habit, temperature 99° F., abdominal pains constant. Dr. Dudley saw her somewhat less than a week after she entered the hospital, and on physical examination found an enlargement, doughy to the feel, extending across the pelvis, the exact nature of which he was unable to make out. The uterus was forward, was movable, lay apparently on top of the tumor just behind the pubes. There was considerable tenderness; the flow was constant, the temperature slightly elevated, some pain; never, during her stay in the hospital, evidence of collapse. Making a diagnosis of extra-uterine pregnancy, he operated on the 26th of April, not, however, under the supposition that the tumor had ruptured. As soon as the peritoneum was opened he encountered a quantity of blood, removing as much as a quart of clots and bloody serum. In his haste he lost sight of the fetus, which was thrown out by the attendants. The placenta occupied the left side of the pelvis. The right ovary showed a large corpus luteum. Both tubes and ovaries were tied off. The patient had no further trouble, and was then convalescent. The pathologist had examined the specimen, which he said was placental tissue of young age. It seemed evident the rupture must have taken place three weeks before the patient was operated upon. The pathologist, Dr. Frank Ferguson, found no evidence of a corpus luteum in the left ovary, the side on which the rupture had taken place, and stated that it was a case in which the ovum had migrated from the right side to the left. The speaker, however, doubted whether the ovum ever passed through or around the uterus to the fimbriated extremity of the opposite tube and there attached itself.

DR. FLORIAN KRUG presented a

DILATED STOMACH SIMULATING OVARIAN TUMOR,

which, though not strictly gynecological, was of diagnostic interest. The patient was admitted to the German Hospital the 1st of March with a diagnosis of cyst of the ovary. Dr. Krug found a highly emaciated woman, 50 years of age, consisting of little else than skin and bones and a large abdominal tumor. The tumor was fluctuating, extended from the diaphragm down to the pelvis, filled the left side and the right to a distance of four or five inches beyond the median line. It could be felt, on vaginal examination, almost in line with the portio vaginalis, but, having no connection with the uterus nor any apparent pedicle, he was in doubt whether it was a cyst of the ovary, and was impressed with the opinion that it might be a hydronephrosis, due perhaps to carcinoma. But the patient's condition was such that he did not dare to put her under narcosis, nor did he aspirate for diagnostic purposes. One marked feature in the case was the patient's enormous appetite—she wanted to eat constantly; nor did she vomit, and she had a passage daily. She died a short time after admission to the hospital, and at the autopsy nothing was found but an immensely dilated stomach, which reached from the diaphragm down to the pelvis, and was adherent to the abdominal walls as well as to all the intestines. Posteriorly there was a carcinomatous stricture of the pylorus which would admit a goose-quill, and so located that it could not be felt during life. It seemed diagnosis of cyst of the ovary could not be considered definite until dilatation of the stomach had also been excluded.

DR. H. C. COE showed a

HUMAN OVUM TWENTY-FOUR DAYS OLD.

The specimen was sent him by Dr. Noble, of South Carolina. There was little doubt but that the age of the ovum was twenty-four days.

EXTRA-UTERINE PREGNANCY; DEATH FROM RUPTURE OF THE SAC.

DR. H. T. HANKS presented an ovum found at autopsy in the case of a woman who died very soon after his arrival at the bedside. She had been seized by pain the evening before, lay down and sent for her doctor, who found her quiet, without pain, and thought that nothing serious had happened. He was sent for again next morning, but arrived late, found the patient dying; sent for Dr. Hanks, who came only in time to see her expire. She had been nursing a child for six months, had not menstruated, but the ovum presented seemed not

older than three weeks. The abdomen contained two or three quarts of blood, and it seemed a mystery how such profuse hemorrhage could have taken place from a small rupture in the fimbriated extremity of the tube.

Dr. H. C. Coe exhibited

A UTERINE FIBROID, DOUBLE PYO-SALPINX, AND CYSTS OF THE
OVARIES

removed from a patient 45 years of age. The menopause was approaching, there was not excessive hemorrhage or much pain, and he decided to let the case alone or send it to some electrician; but there suddenly developed high temperature, and on opening the abdomen he found double pyo-salpinx, cyst of each ovary, and pelvic abscess. The case showed that where there seemed to be an uncomplicated fibroid of the uterus there might in reality be other conditions making laparotomy desirable.

Dr. THOMAS ADDIS EMMET then read a paper on

RECTOCELE, ITS CAUSE AND CURE; DEVELOPMENT OF THE OPE-
RATION AT THE WOMAN'S HOSPITAL.¹

Dr. PAUL F. MUNDÉ said that, inasmuch as he had to some extent been the "innocent cause of the war," he would take the liberty of opening the discussion on the paper. He certainly had no idea when, for the sole purpose of furnishing a colored plate for the JOURNAL OF OBSTETRICS, he decided to reproduce Stoltz's and Hegar's operations, as he had known them, of calling forth any comment, either adverse or complimentary. He supposed the operations had originated with the men whose names had been given them. He was pleased, however, to see that Dr. Emmet had gone over the ground so thoroughly and was able to dispute the claim of Stoltz and Hegar to originality. He wished to emphatically disclaim any desire to give honor to foreign authors or operators where it was not due, to the discredit of domestic talent. In fact, although he had spent six years abroad, with exceptional opportunities to witness obstetrics and gynecology in the large Continental universities and in England and Scotland, yet it was not until he went to the Woman's Hospital in this city, where he saw operations by Emmet, Thomas, Peaslee, and Sims, that he got more than a faint conception of gynecological surgery, and it was to that experience that he was most indebted for a start in this special work. He had not been aware that Dr. Emmet had assisted Dr. Sims to do practically the so-called "Hegar" operation in 1856, and when he had given credit to

¹ See original article, page 673.

foreign operators he had done so in good faith. Had he had time, when he wrote the article, to look over the literature, he might perhaps have found some reference to these points in Dr. Emmet's works, but really he supposed that the question of priority was settled. But he was again reminded of the old saying that there is nothing new under the sun.

Regarding Stoltz's operation, he was induced to adopt it because in his experience the oblong denudations invariably gave way. Besides it permitted the ready removal of the suture without interfering with those in the posterior wall of the vagina and perineum, when two operations were performed at the same time. His results from it had been very good, the entire number of his cases amounting perhaps to two or three dozen. He recalled but one in which the cystocele again came down, and there the cicatrix was parted by an unusually severe strain.

Regarding the operation for rectocele, he was perfectly in accord with Dr. Emmet as to what should be done, and he thought the procedure which Dr. Emmet had described in 1883 answered the purpose much better than "Hegar's" operation; but he had offered a criticism upon it in the last March number of the *AMERICAN JOURNAL OF OBSTETRICS*, and had given it up because, while it cured the rectocele, it failed to close the vaginal orifice but left it gaping. One of his first cases had come back to him and stated that she was just as "open" as she was before the operation, and, although he satisfied her that her vagina did not come down any more, she said she wanted to be more tightly closed up. He supposed the fault lay in the manner in which he performed the operation; probably he did not remove enough of the vaginal mucous membrane, and did not go deep enough and catch up all the fibres of the levator ani. He had, by the courtesy of Dr. Emmet, witnessed him do the operation once, and had performed it himself perhaps a dozen times; and while in other respects the result was excellent, yet the vagina gaped. Therefore, as early as 1884, he added to the operation the paring of the labia, and sewed the perineum a little higher up.

He had found the "Hegar" operation a very good one, but he had not seen it tested at childbirth. Anatomically, Dr. Emmet's operation seemed more appropriate.

DR. POLK expressed great pleasure, which it was evident all present shared, in listening to Dr. Emmet. If we could hear him oftener, we would be less likely to forget that all gynecology was not recent.

Speaking for himself alone, he had not performed the operation described in the paper often, for the simple reason that the time which it required forbade it. The work which he did was directed rather toward the general practitioner, the

man who practised in the country and must select a procedure which, while giving good results, must be as simple as was possible. For that reason he confessed to being fascinated by a procedure evolved in Mr. Tait's operation. He was fully aware that it had been considered wholly inadmissible in cases of rectocele, but he did not accept this view. At any rate it could be made to apply in these cases by carrying the dissection in between the vagina and rectum, sewing up the vaginocoele and bringing together the denuded surfaces on either side, including what he considered to be the perineal division of the lumbo-coccygeal muscle. The result, so far as closing the vaginal orifice, keeping up the rectocele, and adding to the general comfort of the patient were concerned, had been such as not only to make him satisfied with the operation, but had led him to recommend it to others for adoption. With regard to the cause of the difficulties from which these patients suffered who had sustained a rupture of the perineum, it had always seemed to him that the briefer the explanation the better, and it might be summed up in the term hernia. The evil effects were merely the result of opening up the pelvic outlet, and the best treatment was to close it with as near an approach to Nature's method as was possible. There was no doubt but what the line along which Dr. Emmet was working was the correct one—bringing together all the divided layers of fascia and the levator ani muscle. The same rule applied here as in the closure of the laparotomy wound, if one would avoid subsequent hernia. The division of the levator ani muscle in the female and its action on the vagina was very nearly the same as in the male, substituting the prostate for the vagina. It gave an offshoot which really corresponded to the pubo-coccygeus muscle, the fibres in the female passing between the vagina and rectum, where it acted as a sling, drawing forward the orifice of the vagina and keeping, as Dr. Emmet had said, the posterior wall in contact with the anterior. As the author had stated, these fibres might be ruptured without a tear of the skin, and cases of that kind had, according to his observation, proven worse than those which were cutaneous.

Reference had been made to the monopoly of American methods by foreign operators. Dr. Polk thought we were largely to blame for this—we were too ready to pull down one another's houses; whereas if one of our confrères in Germany discovered anything, all others backed him loyally in his claim, and it seemed to be their custom to claim all things and settle differences afterward. If Americans were to follow this plan awhile they would have fewer complaints with their neighbors.

Dr. R. A. MURRAY said that, as an obstetrician, he was

quite familiar with tears of the perineum, and he had found time show, as a rule, that the injury was not in the median line, but to one side, the location depending largely upon the position in which the child's head had made pressure. Like others, when he first began practice he made use of the method formerly employed by Dr. Emmet for repairing the perineum and curing the rectocele, but, while it was easier and more quickly performed than the later one, he did not think it was as effectual. He had performed Dr. Emmet's later operation in a number of cases, and, as Dr. Polk had said, it required some time. He had, therefore, recently modified the procedure somewhat. Instead of using silver wire for the internal sutures in sewing up the three triangles caused by drawing the crest of the rectocele forward, he had used catgut inside and silver wire outside. Thus, not having to take out the vaginal suture, he had obtained better results. Then, too, one was thus enabled to make greatest traction on the side where the greatest amount of tear existed. The catgut could be put in much more quickly than the wire; it did not have to be taken out afterward. The external suture could be taken out on the eighth or tenth day, and the patient leave the bed as early as after the old operation.

DR. W. GILL WYLIE said he was under Dr. Emmet at the Woman's Hospital a good many years ago, and learned from him the procedure which he adopted in 1872-3, and agreed with him that it was a great improvement on the method before in use, in which the operator worked more out on the skin than in the vagina when closing the labia. He knew that Dr. Emmet was not fully satisfied with this method, and when the speaker left the hospital he determined to try to improve upon it. About the time Dr. Emmet introduced his new operation, the one described to-night, Dr. Wylie also devised one somewhat similar, although differing from it in some important particulars, and published it in the *New York Medical Journal*, without diagrams, in 1883 or 1884. Not much notice seemed to have been taken of it, however. He regarded the function of the inner portion of the perineum as being mainly to support the lower end of the rectum and to divert the fecal matter coming down from the crest of the sacrum backward out through the anus, and the operation which he did accomplished this purpose by preventing the fecal matter from crowding the vagina forward, displacing the uterus, and forming a rectocele. He worked within the vagina, as Dr. Emmet did, and his first incisions were exactly like Mr. Tait's. Commencing at the junction between the skin and mucous membrane, he first made two lines of incision on the sides, then one in the centre, forming a curve then, instead of dissecting up the sulci separately, as Dr. Em-

met had described, he dissected out the whole tissue between the incisions, pressed the rectocele downward, and with the sutures brought up the two depressed angles over the rectocele. He did not put all the sutures outside, as in the old operation, but passed them from side to side, except the two outer ones. Repeating, he said he closed what he called the external portion of the perineum with three or four sutures, and then three, four, and sometimes five were passed from side to side down under the sulci on either side, and over the rectocele, so as to draw together the two depressed angles over it. The operation was easy to perform, and in his experience was successful. The whole vaginal outlet was drawn inward, the rectum being most prominent, as it was naturally, and he believed it prevented the fecal matter from re-forming the rectocele during its passage outward.

His objection to Dr. Emmet's operation was that it left the anterior portion of the rectocele undennuded, and allowed the fecal matter to come down the curve of the sacrum and wedge forward, push aside the two sulci which he had sewed up, and tend to re-form the rectocele. He had, however, performed Dr. Emmet's operation only once, possibly because he was very well satisfied with his own, and therefore was not in a position to pass judgment upon the former.

DR. H. T. HANKS expressed his great pleasure at having heard the reading of Dr. Emmet's paper in which he had traced the development of this operation at the Woman's Hospital, and said he believed that those who had had even the best opportunity to learn from him his method were unable to perform it so skilfully as the originator. On one occasion he had in his service a very bad case of rectocele, and one day, when Dr. Emmet wished to demonstrate his operation to a visitor from abroad, they sent him in this patient, and the result was that she was entirely cured. This case, and others which had proved so intractable under different operations, but which were cured by Dr. Emmet's, proved to him the excellence of the latter.

We were in a transition stage concerning the treatment of these cases, some trying Dudley's, some Martin's, some Emmet's, and some other procedures. But any method which would restore the perineum and support the floor of the vagina was a good one. He doubted, as Dr. Goelet had done, whether he would perform Dr. Emmet's operation in all cases of laceration of the perineum, for in perhaps one-third or one-fifth the laceration was in the median line. In Dr. Emmet's operation he used Martin's buried suture, and employed cat-gut before coming down to the ground suture in the sulci on either side.

DR. A. P. DUDLEY felt deeply grateful to the author for

his paper; for, although he was a student under him at the Woman's Hospital, yet he believed that now he understood his operation better than he ever did before. The speaker wrote a paper, over a year ago, in which he criticised some of the terms employed by Dr. Emmet, and by which he was misled in his conception of the operation, but now he thought they entertained the same views of the conditions present in the class of cases under discussion. He believed that what he had considered aponeurotic structure Dr. Emmet had spoken of as fascia. Where, for instance, the two parts of the levator ani muscles shaded into each other in the perineum, Dr. Emmet, he thought, had applied the term fascia or fascial connection where he should have used the term fascial aponeurosis. As was well known, all muscles had two attachments, though not necessarily to bone, and when one attachment was severed the muscle retracted in the opposite direction. In the case of the levator ani muscle and the transverse muscles in the perineum, when they became severed they retracted toward the attached end, and what at first was a straight or perpendicular laceration afterward appeared transverse. Fascial tissue did not contract, and, thinking Dr. Emmet had used the term in the ordinary sense, he had misunderstood him and criticised his operation. He now believed that the operation did lift the aponeurotic structure between the two halves of the levator ani muscle and restore the parts. Any operation which failed to push back the cellular and mucous tissues which pouched forward between the two halves of the levator ani muscle and formed the rectocele, and at the same time lift and join together this muscle, thus restoring the sphincter action, would also fail to relieve these cases.

DRS. REEVES JACKSON, of Chicago, and BOYD, of Albany, present by invitation, expressed their warm thanks for the opportunity to listen to the reading of Dr. Emmet's very able paper.

DR. EMMET, in closing the discussion, said he thought the reason why Dr. Mundé had left the vaginal outlet open was that he had probably failed to carry the denudation high enough. If this were carried up to the caruncle on either side and the surfaces approximated, the vaginal outlet must be exactly of the size it had been originally. Failure in this regard had occurred in the hands of more than one operator.

With regard to the operation described by Dr. Polk, he had seen it performed many years ago by Dr. Peaslee, and asked the President if he was mistaken. (DR. POLK here stated that he did not claim priority in the matter.)

In reply to Dr. Dudley, he said he meant the fascia and nothing else—the fascia or sheath that invested the muscles, which separated and retracted, and which he sought to bring

together, along with the superficial fascia too, if he could get it.

THE PRESIDENT, replying to the question asked by Dr. Emmet, said he had performed the operation described by Dr. Polk for twenty-five years, and it was taught him by Dr. Peaslee.

DR. POLK remarked that Dr. Janvrin had probably taught it to him.

TRANSACTIONS OF THE GYNECOLOGICAL SOCIETY OF CHICAGO.

Regular Meeting, February 21st, 1890.

The President, JAMES H. ETHERIDGE, in the Chair.

DR. HENRY T. BYFORD read a paper on

THE CURE OF CYSTOCELE BY INGUINAL SUSPENSION OF THE
BLADDER; COLPO-CYSTORRHAPHY.¹

A FIBROID TUMOR OF THE UTERUS COMPLICATED WITH AN OVA-
RIAN TUMOR; OPERATION; COMPLETE REMOVAL
OF THE UTERUS; RECOVERY.

DR. H. P. MERRIMAN.—Miss De G., age 51, of good health previously, came to the Presbyterian Hospital with the following history. She had first noticed a swelling in her abdomen in the summer of 1889, which rapidly increased in size and became very painful. Her physician, she said, told her he feared that the tumor was malignant.

On examination, inspection showed an irregular outline, more prominent on the left side of the abdomen, which was hard and not fluctuating. On the right side fluctuation could be detected. With finger in the vagina the os could be reached with difficulty by pressing down the tumor on the left side. In the cul-de-sac of Douglas a fluctuating mass was found, which was increased by pressure on the right side of the abdomen. Examination by rectum revealed no new facts. The whole examination was very painful to the patient.

Diagnosis.—An ovarian tumor on the right side, and on the left a tumor of the uterus, character unknown, but sarcoma feared on account of the rapid growth.

The patient said she was suffering so severely that she

¹ See page 152, February, 1890, number of this JOURNAL.

wished the tumor removed if there were only one chance in a thousand for her recovery.

Operation, February 10th, 1890. Present, Drs. Etheridge, Nelson, Knox, Parks, Graham, Bridge, and Stehman. Incision made in the median line from above the umbilicus nearly to the symphysis. On opening the abdomen the uterine tumor was first seen, but was movable, with slight adhesions. On pressing it to the left the ovarian tumor was seen to the right of it and behind it. This was removed without difficulty in the usual way, and the uterine tumor lifted out of the abdomen. It was found to be a fibro-myoma. It was determined to remove it. The bladder was first dissected off by the handle of the scalpel and by the fingers until the operator could feel the finger of his assistant, which was thrust up the vagina to the os.

The broad ligament on each side was then ligated by successive stitches (care was taken to avoid the ureters), and, clamp forceps being placed close to the tumor, the broad ligament was divided down to the cervix and the whole uterus dissected out as completely as in vaginal hysterectomy; the vagina being amputated close to the os.

All bleeding points were carefully ligated and the abdomen washed out three times with boiled water for fear of infection from the vagina, which, however, had been thoroughly douched with a sublimate solution (1 to 4,000) before the operation.

The amount of blood lost during the operation was less than half a pint, being at no time sufficient to form clots in the abdomen. The abdomen was closed in the usual way, and a tampon of iodoform gauze was inserted in the vagina.

Succeeding History.—There was little nausea for the first eighteen hours, but for the next three days it was very severe and was the chief source of distress to the patient. She complained of sinking, and of some pain which was chiefly in the vicinity of the stomach and diaphragm.

The temperature remained below 99.6° until February 20th, ten days after the operation, when it suddenly went up to 102.2°, and the pulse to 120. Some pus was found coming from two of the stitch holes. The following day pulse and temperature were again normal, and did not afterwards reach 100.

There was a moderate discharge from the vagina for the whole month. On the sixth day the tampons were discontinued and daily douches ordered.

Comments.—From the position of the ovarian tumor, behind and below the fibro-myoma, the operator presumed that the *apparently* rapid growth of the latter was only the result of the pressure of the former in its more speedy development.

The operation was rendered less difficult by the slightness of the adhesions, and the previous good health of the patient favored recovery. The patient left the hospital March 28th, fully recovered.

DR. J. S. KNOX.—I saw that operation and am delighted at the results. I wish to call Dr. Merriman's attention to something that will explain, perhaps, the suppuration in the track of the stitches. The doctor used an ingenious method of making the stitches. He threaded a loop, and an assistant slipped a ligature into the loop each time a stitch was made, so as to quite rapidly insert the sutures. This saved the threading of more than one needle, but there was a constant re-introduction of the loop through living tissue and blood, and subsequent contact with air that was not disinfected. I believe the ligatures used were thoroughly aseptic, and the sutures were drawn through only once, therefore I doubt if the trouble came from them.

As far as the treatment of the stump is concerned, the doctor obliterated it and there was none to care for. There is a risk in these operations, as I see by recent literature. Loops of small intestine may become adherent to the vaginal wound and obstruction of the bowels occur. In the last two months several deaths have occurred from such cause. That, I think, is the sole objection to this method of hysterectomy.

DR. W. W. JAGGARD read a paper in which he endeavored to defend the theses:

1. There is no expectant treatment of placenta previa. As soon as the diagnosis is established, terminate pregnancy.
2. It is the physician's duty to remain by his patient until she is delivered and out of danger.
3. The best routine treatment is that outlined by Braxton Hicks. Turn by Braxton Hicks' method, and plug the lower uterine segment with the child's body, but do not extract.
4. In lateral placenta previa, vertex presentation, rupture the membranes, and if the hemorrhage is not arrested apply forceps.
5. When conditions for version or forceps are absent, tampon with Braun's colpeurynter, or iodoform gauze or wicking.

PLACENTA PREVIA.

DR. J. S. KNOX.—Mr. President, five cases of placenta previa have come under my observation, and I would like to make a few deductions from them.

The first case was a central implantation, profuse hemorrhage occurring at the completion of the sixth month. I was called in consultation by the physician in charge and found that he had applied a tampon. The woman was almost exsanguinated from loss of blood, and the pains were strong and

expulsive. The tampon had been in three hours, and I was satisfied from the character of the pains that the os must be to some extent dilated and that delivery would be proper. Rapidly taking out the tampon, I was able to get two fingers through the os, passing directly through the placenta, and found the feet presenting. I seized the feet and made the extraction without difficulty. The placenta came readily away. The woman was so utterly feeble and almost pulseless that no attempt was made to disinfect the uterine cavity or the vagina, but she was freely stimulated. She made a slow but satisfactory recovery, without evidence of septic infection.

The second case was a patient of my own, living on Washington Boulevard. It was a second pregnancy following a first confinement within three months. At the sixth month of gestation she had a hemorrhage while asleep in bed, which awakened a suspicion in my mind of placenta previa. A careful examination confirmed the suspicion, and Dr. Miller, who saw the case with me, made the same diagnosis. I secured a Braun's colpeurynter, and, getting a competent nurse from the hospital, instructed her in its use and determined to let the woman go to the seventh month. A second hemorrhage occurred two weeks after the first, which ceased almost as soon as it came. The colpeurynter was used, but discontinued after an hour or two. She remained in bed for two weeks, when she again had a profuse hemorrhage. The nurse was with her and used the colpeurynter, which was left *in situ* for nearly thirty-six hours. It brought on labor, and when I was satisfied that delivery could be accomplished Dr. Earle was called in to assist. We collapsed the colpeurynter, and I introduced my hand and found the bag of waters presenting. I ruptured it and succeeded in introducing the forceps and rapidly delivering. A living child was extracted, and it survived twenty-four hours, when hemorrhage occurred at the cord. Every effort was made to save the child's life, but it died of the hemorrhage. In this case the uterus was thoroughly washed out and the woman put on fluid extract of ergot for two weeks. She made a satisfactory recovery. I saw her subsequent to her recovery, found a double laceration of the cervix, and repaired it.

The third case was one of central implantation. The first hemorrhage occurred at the end of the sixth month of gestation, the day after I saw the case I have just reported. I was very suspicious, of course, and made a careful examination. Dr. John A. Robison, who lived near by, was called in and agreed with my diagnosis. The husband, a very intelligent man, was instructed how to use the colpeurynter, and I determined to let the woman go to seven months of gestation in order to save the child, if possible. No further hemorrhage

until the seventh month, when, while walking about the floor, she had a gush of blood. The husband, being present, placed her on the bed and, introducing the colpeurynter, inflated it with his mouth. I found it well distended, but increased the distention of the bag and left it in for twenty-four hours. The urine had to be drawn and the bowels were pretty well pressed upon. The woman suffered considerably and was given morphine hypodermically. At the end of twenty-four hours she had expulsive pains, the colpeurynter was pressed down on the vulva, and I thought it time to deliver. In this case I had to tear off the placenta; finding a transverse presentation, I delivered by the feet. The child was born alive and lived for nearly thirty-six hours.

The fourth case I saw in consultation with Dr. Davis. He came to me in the night, stating that he had been called to a woman with a severe hemorrhage, that she was seven months pregnant, and that he suspected placenta previa. When I got there I found the woman pretty well exsanguinated. The tampon was reinforced, and the doctor and I stayed three or four hours, until we were satisfied delivery could be accomplished. He introduced a hand into the vagina, and, tearing away a portion of the placenta, reached the feet of the child, turned and delivered it. The woman was so exhausted that we thought it best not to use any after-treatment except to save life. She was given hypodermic injections of whiskey, ergot, and opium. She made a satisfactory recovery.

The fifth case was a marginal implantation. The woman went through eight months of pregnancy, and in the first week of the ninth month was taken with sudden hemorrhage. I made a careful digital examination, but found no evidence of placenta previa. About a week afterwards she had a second and severe hemorrhage, and a neighboring physician who was called immediately introduced a tampon. I was sent for, and finding the tampon incomplete reinforced it, packing the vagina full of borated cotton. The tampon was left in thirty-six hours; it brought on labor, and I concluded to remove it. I was glad to find the os dilated, the membranes ruptured, and the head engaged in the superior strait, arresting hemorrhage. This woman had a previous bad history of delivery; this was her third pregnancy occurring in three years. The first delivery was artificial, mutilation of the child being done in order to accomplish its extraction. Her second labor came under my observation. She had an occipito-posterior presentation, and, remembering Dr. Sawyer's suggestion, I rotated the occiput forward several times, but every pain would replace it, and at last I concluded the only thing to do was to try forceps. I rotated the head forward again, applied the forceps, and extracted the head with the occiput

under the symphysis pubis. The child was evidently injured by the forced rotation; it commenced to bleed freely from the ears, and died in a few hours. In this third labor the woman went eight months and a week. After the tampon was removed she made no further progress, although every effort was made to encourage delivery, and finally the forceps was put on and delivery accomplished. She had a miserable laceration of the cervix, which I intend to repair. In this case no attempt was made at washing out the uterine cavity; the vagina was kept disinfected, and the woman made a good recovery.

This is too small a number of cases of placenta previa to base conclusions upon. I simply wish to call attention to four items. The first of these is the great mortality of children in placenta previa. In two of these cases the placenta previa was detected early and every precaution was used to continue the pregnancy up to the seventh month. In both cases delivery was made of living children. One child died from purpura hemorrhagica at the end of twenty-four hours—a persistent hemorrhage of blood which refused to clot, although every effort was made to arrest it. The other child died of exhaustion. After diagnosis of placenta previa is made I doubt the wisdom of prolonging the gestation in the forlorn hope of securing the life of the child.

The second item I would call attention to is the immunity of these few women from sepsis. With a deep implantation of the placenta, with torn uterine sinuses, with the probable introduction of septic material into the uterine cavity of each, and antiseptic treatment adopted with but two, still not one of the five presented the slightest evidence of sepsis.

The third point I would call attention to is the value of the colpeurynter. This was used in two cases. I doubt if it is possible, in the emergency of hemorrhage from placenta previa, to otherwise properly tampon the vagina. The hemorrhage is too profuse and the haste required too great. In addition there is a risk of sepsis being introduced with these hasty tampons. On the other hand, it is the simplest thing in the world to slip the collapsed bag into the vagina and inflate it. In addition to the ease with which it is introduced, I would call attention to the complete manner in which it arrested hemorrhage; the elastic rubber bag fitted close to the walls, and it gave as little pain as any tampon could. It is removable almost instantaneously, and I think it is *par excellence* the tampon for placenta previa.

The fourth point I would make is the cause, as far as these cases show, of this deep implantation of the placenta. The first patient, the doctor told me, had had one pregnancy, one miscarriage, and a second pregnancy in thirteen months; the

uterus was kept constantly at work and no opportunity given for the full repair and healthy condition of its mucous lining. In the second case I had delivered the woman but nine months before she had her second child. Thus impregnation had occurred two months after the instrumental delivery of the child and the tedious getting-up of the woman. In the third case I have always confined the lady, and she has had five deliveries, one miscarriage at four months and one at six months, and has not been married eight years, so that her uterus has been constantly active. The fourth case, the one occurring in the practice of Dr. Davis, was a first pregnancy. In the fifth case there had been three deliveries, all artificial, all painful, all occurring in three years. So I should say that frequency of functional activity and imperfect repair of the uterus is a common cause of placenta previa.

The fifth point I would make is that forcible delivery and the peculiar condition of the internal os almost necessitate cervical laceration. All five suffered from this accident. I have a case at present in the Presbyterian Hospital, a lady who was delivered by another physician seven years ago, under placenta previa. She came to me for operation. I found a double laceration of the cervix opening up to the internal os. In every case that has come under my observation there have been one or two lacerations due to the anatomical condition and the forced delivery of the woman.

DR. H. P. NEWMAN read

A REPORT OF FIVE CASES OF PLACENTA PREVIA.

Owing to the rarity of this condition—the frequency being computed at about one in one thousand pregnancies—the experience of any one man, except in the large Maternities, cannot be very extensive, but for this very reason is of greater value, since published records bearing upon the subject are meagre, though the question has always been one of great controversy. In the following five cases coming under my observation during the past four years, I regret that a more detailed account cannot be given, but the clinical facts are essentially these:

CASE I.—A central implantation of the placenta, in which no hemorrhage occurred throughout the entire pregnancy until the very last days of gestation.

The patient, Mrs. B., a strong, healthy woman of middle age, has borne seven children and had three miscarriages. With the exception of rapid childbearing, a laceration of the cervix, and one faulty presentation necessitating version, her former history has no particular interest. Ten days prior

¹ Reported to this Society at the April meeting of 1886.

to delivery at term there was the first appearance of bleeding, which was easily checked by the patient assuming the recumbent posture, and it was not until five days later that the hemorrhage became at all abundant. Delivery took place on Tuesday, April 13th, 1886. On the preceding Friday Dr. R. N. Hall was called, and diagnosed placenta previa, using the tampon.

I first saw the case in consultation with the doctor on Tuesday morning. The repeated tamponing and use of the colpeurynter the night before had had the effect of gradually bringing on labor pains, and softening and dilating the cervix to the diameter of nearly two inches. A digital examination revealed nothing but a thick placental surface upon all sides, covering, as we afterwards found, the entire lower segment of the uterus. By bimanual palpation we made out a shoulder presentation (left dorso-anterior), and decided on immediate delivery.

Every preparation being made to control hemorrhage, the placenta was carefully separated from its uterine attachments upon the left side, and the right hand carried upward between the membranes and uterine walls. When the feet were reached the sac was ruptured, podalic version performed, and the child extracted. Meanwhile Dr. Hall had followed up the evacuation of the uterus by firm bimanual pressure through the abdominal walls. The placenta, which was a large one and pretty evenly distributed upon all sides, was separated from its remaining attachments and removed as speedily as possible.

The entire procedure was accomplished in less than five minutes, and the hemorrhage was not excessive considering the nature of the case. The child was saved, and the mother made a rapid recovery, being up and about the house within ten days.

CASE II.—Also a case of central implantation. Mrs. W., a strong, hard-working Polish woman, about 35 years of age, having two living children and no miscarriages in fifteen years of married life. Former pregnancies and labors normal, with the exception of laceration of cervix and perineum. The first hemorrhage took place June 11th, 1887—seventh month of pregnancy—and was attributed to the exertion consequent upon caring for a sick husband. The flow was not excessive and was relieved by recumbency, uterine sedatives, styptics, etc. During the following six weeks three or four rather copious hemorrhages occurred at intervals of ten days to a fortnight.

July 26th the woman was delivered of a healthy female child, the medical attendant being Dr. J. C. Pickard. I was called in consultation during the last days of gestation, and, as

there was rigidity of the cervix, advised use of the colpeurynter and cervical tampon to restrict flow and excite uterine contractions. These precautions being rigorously carried out, with full antiseptic precautions, a fair degree of softening and dilatation of the cervix was obtained before the necessity for delivery became urgent, two days later. The bipolar method was employed, and delivery accomplished with little difficulty and a limited loss of blood. It was necessary to introduce the hand into the uterus to separate the placenta from its remaining attachments, which were found to constitute a complete circling of the lower segment of the uterus.

The mother's recovery was rapid, without complications. The child was in every respect a well-developed, healthy infant, in no way prejudiced by the incidents attending its birth. It died, however, some weeks later from cholera, caused by the heat of summer with lack of proper food and attention—like so many others of its class.

CASE 3.—I was called to see this patient in the absence of the attending physician, Dr. J. S. Knox, to whose courtesy I am indebted for the subsequent history of the case.

Mrs. A., age 20; mother of five children. The first hemorrhage attracting attention occurred November 9th, 1888. This and four or five following attacks, covering a period of about six weeks, were controlled by rest in bed and appropriate remedies, until the morning of December 24th, 1888, when more serious flooding necessitated the use of the colpeurynter and tamponnade. The ensuing night the patient was delivered by Dr. Knox of a living child by means of combined version without anesthesia.

This also was an instance of placenta previa centralis, and I am informed that of the woman's previous labors only two were vertex presentations, the others being brow, transverse, and breech respectively. The mother made a prompt and satisfactory recovery, but the child, being a seventh months' fetus and very feeble, died the following day.

CASE 4.—On the 27th of April, 1888, I was called to see Mrs. S., a middle-aged German woman, then in the sixth month of pregnancy. Had been taken with hemorrhage a few days previous, but had been kept in bed by a midwife, and the flow had ceased. As the cervical canal was intact and rather long, and as the child was not viable, it was thought best to temporize, and the usual remedies and directions were given. An attendant was provided and instructed to use the tampon in an emergency. A few days later I was called out of town, and left the case in charge of a neighboring physician.

On May 10th there was a recurrence of hemorrhage with advent of labor pains. The physician in charge could not be

obtained, and through some misunderstanding of directions a substitute failed to find the residence of the patient. After eight hours' delay and constant hemorrhage a local physician was obtained, and he proceeded to operate. Chloroform was administered and the patient died immediately. No attempt was made to remove the child from the uterus.

CASE 5.—Marginal implantation; Jewess, 23 years of age. History of one previous labor and one miscarriage. General health poor throughout this entire gestation. Was taken in labor October 21st, 1889, about 11 A.M.

As the distance from my house was great, I did not reach the patient until late in the afternoon. I then learned from the midwife these particulars: The first indication of labor—full term—was a bloody discharge followed by pain and rupture of the bag of waters. After escape of liquor amnii the flow was materially lessened, and but little blood was lost from this time on until delivery. An examination showed edge of placenta attached low down upon right side of uterus, so that it could easily be felt through partially dilated cervix. Subsequent dilatation of os and engagement of head were slow and tedious, but no further trouble was experienced from loss of blood until the final delivery with forceps. The placenta, rather small and of the battledoor type, was adherent and with difficulty detached and expelled. The subsequent progress of mother and child was in every respect satisfactory, and the latter is now vigorous and healthy.

I have but few observations to add. Care should be exercised in the choice of an anesthetic, chloroform especially being a dangerous agent in cases where there has been much hemorrhage and the patient is exsanguinated and anemic. Case 4 is a sad example of its ill-advised use, and it is probably owing to the rarity of the anomaly under discussion that there are not more accidents following the administration of this drug. Certainly, I have failed to find in any published literature upon this subject a word of caution, or any mention of the restrictions to be placed upon its use in placenta previa.

My attention has been called to the possible merits of nitrous oxide gas as applied to these cases, having used it with very happy results upon a patient who had been extremely reduced by hemorrhages at and following abortion. The stimulating and strengthening properties of the oxygen were very apparent in this instance, and I would urge that it be given a trial in preference to other agents where an anesthetic is indicated.

Again, as to the relative mortality of mothers and children in placenta previa, in former times the fatality to both was appalling. But this was due in part to the fact that prior to the introduction of antiseptics all grave surgical and obstetrical

procedures were more liable to terminate unfavorably, and in part to the faulty pioneer methods of treatment. The happy results obtained by some of our modern obstetricians have recently led more than one of them to remark that the terrors of placenta previa are much overrated. Yet the fact remains that the fetal mortality is still as high as in the old methods.

The prevalent teaching is to favor that method which offers best results to the mother, "without regard," I quote, "to the life of the child"; and more than one author commits himself to the assertion that it is better deliberately to sacrifice the living child ("and we admit," he says, "that the child is sometimes directly sacrificed by this method") than that the mother's safety should be so much compromised in its behalf.

This attitude of obstetrical teachers, and the theory advanced almost unanimously that the only safety lies in immediate delivery, tend to engender a haste and rashness in terminating these cases which savors rather of the *accouchement forcé*, or forcible delivery, of the early operators, than the judicious application of physiological principles to the indications in individual cases.

DR. D. T. NELSON.—My experience has fortunately been small in these cases. However, that experience has fixed in my mind the thought that the cause is due to a diseased condition of the fundus uteri, so that the ovum finds its implantation at the cervix instead of the normal position. Laceration of the cervix is, I believe, of very common occurrence, and hemorrhage after delivery, unless carefully watched, very likely to be serious, even fatal. The treatment of hemorrhage after delivery has been referred to. While styptics and the like may be desirable, I believe that in nearly all instances it will be found important to use sutures. They can be easily applied by pulling the cervix down where the bleeding vessels can be seen and tied. The immunity from sepsis following has been noticed. It seems to me there is a sufficient reason for this in the wide-open, non-contracted condition of the cervix: it is not in a condition to contract, as it was not in a condition to dilate previous to delivery, without rupture; and having been ruptured or dilated in some way, it is not in a condition to contract, and therefore does not contract and imprison septic material. Drainage is perfect. Treatment and other points have, perhaps, been sufficiently discussed. Remaining with the patient, that intelligent attention may be constantly present, I believe should be emphasized in all discussions on this subject, for fatal hemorrhage may come on in your absence, as I have known it to do in one if not two cases. A patient who is the subject of placenta previa should be constantly under the observation of an intelligent person.

DR. W. W. JAGGARD. — Gentlemen, none of you have

deemed it best to make any remarks by way of criticism upon my paper. Now, this is the most powerful criticism you can make on it. I am not sensitive, however, so I will let that go, and, inasmuch as you have not criticised my paper, I am going to heap coals of fire upon your heads by making a few remarks on yours. But before doing so I want to call attention to the propositions I laid down in placenta previa. First, there is no such thing as an expectant plan of treatment in placenta previa. With the separation of the placenta hemorrhage is inevitable and not accidental. If you admit that fact, there can be no such thing as expectant treatment. The natural history of the course of placenta previa, clinical experience, the most responsible and authoritative opinions, alike condemn the expectant plan of treatment. A concrete example of this is the case which has been cited in which the expectant plan of treatment was practised and the woman became very nearly exsanguinated during seven hours of hemorrhage. I think this is an example of the folly of temporizing, and not an example of the evil effects of chloroform. It was the loss of blood and not the use of chloroform that caused the woman's death. It was the temporizing plan of treatment and not the anesthetic. That opinion is formed from the doctor's account of the case.

Second, as soon as the diagnosis of placenta previa is made it is the duty of the practitioner to terminate pregnancy as soon as possible, and remain with his patient until that pregnancy is over and the woman out of danger.

Third, the best plan to use is the combined internal and external version by Braxton Hicks' method, the so-called two-finger method. Plug the cervix with the breech and then let the case alone; stand by and watch, and if the hemorrhage recommences just pull on the leg a little bit until the hemorrhage ceases entirely, but leave the extraction to nature—do not extract yourself. If you do this you will not have the lacerated cervices to which Dr. Knox so feelingly alludes. If you do this you will not have the lacerated cervices from forceps application which Dr. Sawyer mentions.

There is no objection, in the fourth place, in cases of lateral or marginal placenta previa, with the os dilated and dilatable, to rupturing the membranes and letting the head engage and labor occur spontaneously; in the event of hesitation or slowness, the employment of forceps or version is indicated.

The third proposition, as you see, does away with the tampon, does away with the colpeurynter, and entirely eliminates Barnes' bags, which are an abomination in placenta previa. It is very seldom that you are called to a case of placenta previa where the first condition for Braxton Hicks' method is not present. He only requires the effacement of

the vaginal portion and a dilatation of the os to the extent of two fingers. It is very seldom in practice that the tampon or the colpeurynter is indicated, but in those highly exceptional cases of primiparae in whom the vaginal portion is not effaced and the os is not dilated to the extent of two fingers, there is no question at the present time but that the most efficient vaginal tampon is the colpeurynter. But when you use it water should be employed to inflate it, and not air. The arrest of hemorrhage may be complete, and it furnishes a powerful stimulus to uterine contractions and aids materially in the dilatation of the cervix. The chief objection to it is that the instrument is not always at hand, and, second, that these rubber bags deteriorate with age. In this city I have tested my colpeurynters twice a year, and have had to renew them that often.

I cannot agree with Dr. Knox that the woman in placenta previa has immunity from puerperal infection. I think this is a matter of fact and not of opinion, and, therefore, one may say things in positive terms without being accused of dogmatism. The five cases narrated do not constitute a sufficient basis from which to make any generalization. There is not only no immunity from sepsis, but a very great predisposition to it on account of the atrium for infection being much greater than in normal labor. Indeed, I am not clear that the case of purpura hemorrhagica in the babe that Dr. Knox spoke of is not an example of sepsis. I think the opinion is that hematophilia is an example of infection of the blood.

In all the cases narrated there have been two faults: First, the temporizing plan of treatment; second, the extraction of the child either by the foot or by the forceps to the head, without giving Nature a sufficient chance to terminate the labor spontaneously.

In regard to Dr. Sawyer's remarks on causation, the Achilles heel of this hypothesis lies just here: It has long been recognized that in placenta previa we very frequently have the insertion of the cord in the margin, as depicted there; but it has also been observed that the cord is not inserted at the superior margin, but at the inferior margin. Furthermore, as illustrating how exceedingly difficult it is to get hold of a new idea in obstetrics, very nearly that same hypothesis was advanced years ago by Mueller, who recognized in every case of placenta previa an attempt at abortion, although he did not distinctly use the terms rotation of the ovum. The principle involved, however, is the same.

Epidemic influence has been invoked to explain almost every ill to which the human animal, male or female, is subject, but I never before heard of an epidemic influence being invoked to explain placenta previa. I think the ground upon

which this invocation has been made is exceedingly narrow and not very deep.

DR. KNOX, in closing the discussion, said: I have nothing further to say, Mr. President, except to report my experience in these cases in answer to the suggestion of Dr. Nelson. I was surprised to find that there was no tendency to post-partum hemorrhage. I expected an imperfect contraction of the womb. It may be due to the fact that I placed my patients on fifteen minims of ergot every three hours for the first two days. There was no more post-partum hemorrhage in these cases than with a normal implantation of the placenta.

I am inclined to disagree with Dr. Nelson in regard to his statement that the internal os does not contract. I think it does. I took occasion to examine two cases as to that, after delivery, and I found a firm and energetic contraction of the uterus and a tight and firm contraction of the internal os. I think the use of ergot after delivery in such cases is imperative. I think there is a risk of relaxation of the lower segment of the uterus and of post-partum hemorrhage, particularly where in forced delivery there is in addition laceration. Therefore I think an agent, such as fluid extract of ergot, which will secure and maintain a tight and firm contraction, should be used for several days after delivery.

DR. NELSON.—Mr. President, I simply rise to a single statement in reference to the discussion that has been going on regarding the persistence of hemorrhage. I have seen but one case in which it was at all troublesome, and that case required no special attention; but having seen arterial hemorrhage in other cases from laceration of the cervix, I threw out the hint that sutures should be put into the cervix when there was hemorrhage, especially if of an arterial type, as the circular artery, I believe, could be readily lacerated in a case of placenta previa, although I have never seen it.

EXHIBITION OF SPECIMENS:—VELAMENTOUS INSERTION OF CORD;
ABORTED OVUM WITH PERSISTENT UMBILICAL VESICLE.

DR. W. W. JAGGARD.—I have here two specimens, bearing on the immediate discussion, to which I would like to call the attention of the Society. The first is one of the most typical examples of velamentous insertion of the cord that have come under my observation recently. The cord is inserted five inches distant from the placenta. The child was perfectly the insertion producing no symptoms whatever in this case.

The second specimen is from an abortion which occurred this afternoon. I call attention to it because it illustrates the fact that in the treatment of threatened abortion, after you have put the woman to bed and tried rest and opium, if after

a week or ten days the hemorrhage still persists, it is well, as a general rule, to recognize the fact that the ovum is hopelessly diseased, and it is better to encourage the abortion. If the ovum is healthy and the abortion preventable, rest for from seven to ten days will tide the woman over. It is bad practice to keep a woman in bed indefinitely with a diseased ovum in her body. And of course the indication for letting the woman get up and stir around is still stronger where there is a history of syphilis or previous abortions. In this case sufficient cause for abortion was manifest. There is a very large clot, as big around as my thumb, in the decidua and chorion. The interest here, which also bears on this evening's discussion, is the persistence of the umbilical vesicle. The pregnancy was of about ten weeks' duration.

DR. F. H. MARTIN.—I wish to put on record a case of vaginal hysterectomy for cancer of the cervix extending into the body of the uterus.

Record from Woman's Hospital: Mrs. C. O. B., housewife, age 46, American; married thirty years; nine children; two miscarriages. Sick one year. Pain constant in back. First noticed discharge two months ago; light at first, then darker, with septic odor and hemorrhage. Patient very weak and anemic.

Vaginal hysterectomy was performed April 24th, 1889, assisted by Drs. H. T. Byford, H. P. Merriman, M. J. Mergler, and the house staff of Woman's Hospital. Clamp forceps (Byford's pattern) were used to secure broad ligaments. The peritoneal cavity was left open and the vagina loosely packed with iodoform gauze as a dressing. Forceps were removed at the end of forty-eight hours, and bichloride douches used twice daily until discharge ceased.

Patient made an uninterrupted recovery from the operation. She was seen February 1st, 1890, was in perfect health and with no symptom or sign of returning disease.

Microscopical examination showed carcinoma. Macroscopical examination showed a deeply ulcerated surface invading the anterior wall of the vagina.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF LONDON.

Wednesday, May 7th, 1890.

DR. GRAILY HEWITT (*Past President*) in the Chair.

The adjourned discussion on Dr. CULLINGWORTH'S paper was resumed.

DR. LEWERS said that in determining whether vaginal hysterectomy or supravaginal amputation of the cervix was the better operation in cancer of the cervix, two chief factors were to be considered: 1st, the relative mortality of the two operations; and 2d, the prospect of immunity against recurrence offered by each of them. In total extirpation there was a greater risk of septic infection, owing to the free opening into the peritoneum; a much greater risk of hemorrhage both during the operation and subsequently; and complications such as adhesions between the uterus and intestine or omentum might be met with. The operation took longer, and so there was more risk from shock. Some German operators reported the mortality of total extirpation for cancer as five per cent, but in England it was much nearer twenty. So many of the cases operated on in Germany were free from recurrence that the only possible explanation seemed to be that many of these cases were not really cases of cancer. He quoted cases of his own of supravaginal amputation of the cervix for cancer with no fatal results from the operation, and in which thirty per cent were free from recurrence two years after operation. He believed that in nine cases out of ten the supravaginal amputation was the right operation in early cases of cancer of the cervix.

DR. WALTER GRIFFITH stated that the only cases which could be considered really favorable for removal were cases of epithelioma, and that it did not make much difference which operation was adopted so long as the whole disease was freely removed. He had lost one patient from hemorrhage after the removal of pressure forceps.

DR. MACNAUGHTON JONES said that hitherto cancer of the uterus had been the opprobrium of gynecology. His own record, including many thorough high amputations, had been but a melancholy one. He quoted the statistics published by Drs. Mundé and Wells up to 1889, and collected from the

results of 183 cases of cancer operated on in Germany, France, America, and England. Of these there were 22 deaths after operation, and in only 23 was recurrence noted up to the time of publication, and in 13 recovery was said to be permanent. He alluded to the researches of Abel, which were opposed to the view that cancer of the cervix did not spread upward into the fundus. The microscope was not at times an infallible test. For himself, he felt that in a case in which true cancer of the uterus was once clearly declared in the cervix uteri, and the surrounding tissues were healthy, he should lean to the side of hysterectomy and not amputation. It gave the woman the best chance both of prolonging and saving life.

DR. T. C. HAYES thought carcinoma of the cervix had a strong tendency to invade the body of the uterus. He seldom found that the disease was limited to the cervix when patients came under observation. If there were assurances of this limitation, vaginal extirpation should not be resorted to; it was a much more dangerous operation than amputation, though in the future its dangers would probably be lessened. He urged that patients should in all cases be made fully aware of the serious dangers.

MR. JENNINGS contended that the curability of cancer by extirpation, when the disease had attacked some parts of the body, having been established, there was no reason why cancer of the uterus should not also be successfully dealt with by surgical operations. He maintained that the entire organ should be first removed in cancer of the cervix, and the surgeon's hand subsequently inserted into the pelvic cavity, by which means diseased portions of the parametria and the ovaries could be drawn downward and removed.

DR. CULLINGWORTH, in reply, said that the German operators had not mixed their cases in drawing up statistics, and that at Dresden the operation of vaginal hysterectomy was slightly less fatal in the cases of cancer than when performed for less serious conditions. The argument based upon the contention that the disease did not spread upward beyond the os internum was not of much value. In three out of four of his specimens there was no doubt as to the position of the os internum, while in the fourth case it had to be determined by measurement alone. The glands, upon which Dr. Williams thought the determination should entirely rest, were too far involved in the disease to allow of their identification. In regard to his five museum specimens, in two of them the infiltration had extended to within one-quarter of an inch of the fundus, in one to within one-third of an inch, and in another to within an inch; while in the remaining specimen, though it was certain that the upper part of the corpus as well as the lower had become invaded, it was found impossible, owing to

the age of the preparation, to define the limits by precise measurement. Hence the claim that these specimens disproved the tendency to spread upward could not be sustained. It was often quite impossible for an operator to be able to decide, during the course of the operation, to what extent the parts were affected.

That recurrence after amputation did not take place in the stump but in the parametric tissues was true, though there were exceptions. The phenomenon had its analogue in the breast, disease recurring rather in the skin or glands or other surrounding tissue than in the stump or unremoved portion of the breast gland. The knowledge of the fact deterred few surgeons from removing the entire breast in cases of cancer, and those surgeons who, like Dr. Banks, of Liverpool, removed it most freely, were able to show the largest percentage of cures. No doubt recurrence took place in the majority of cases, no matter how the operation was done. Butlin had shown that even in so accessible a region as the breast the cures did not exceed ten to fifteen per cent. The Dresden statistics compared favorably with these; for of the eighty cases of total extirpation for cancer no fewer than twenty-seven had lived for two years and upward without any sign of recurrence. He maintained also that, apart from saving life, the operation gave the patient at least temporary relief from many of her troubles. Regarding the credibility of German statistics, he had selected those of Leopold, Münchmeyer, and Kaltenbach, which all English gynecologists could accept. The museum specimens he had exhibited were shown to point out that cancer of the cervix of both kinds, if allowed to run its natural course, ultimately invaded the body of the uterus. Mr. Shattock had examined the specimens microscopically; three were squamous-celled carcinoma, one columnar-celled or glandular carcinoma, whilst one was unfit for examination. The utero-sacral ligaments had been examined in the cases operated on, though their condition was not the test as to the propriety of operating.

By using the clamp instead of the ligature for securing the broad ligaments there was, first, a great saving of time, perhaps twenty minutes; and secondly, a larger extent of sloughing in the parametric connective tissue. In supravaginal amputation Douglas' pouch was sometimes opened, and this accident was probably more dangerous than the free opening made in total extirpation, because better drainage was obtained. Dr. Lewers, in comparing the mortality of the two operations, had quoted figures that were altogether incorrect. The mortality from supravaginal amputation was over seven per cent, while that from total extirpation was but five per cent. He (Dr. Cullingworth) thought that English operators

ought not to be guided wholly by English statistics, but that they should be ready to profit by the results of others, whatever might be their nationality. He alluded to Cesarean section and Porro's operation in illustration. He thought that, while the partial operation might be sufficient in most cases of squamous-celled carcinoma, total extirpation was the only safe method of dealing with glandular carcinoma of the cervix. A microscopical examination of a portion of the diseased tissue would decide which operation was called for in any given case.

ABSTRACTS.

1. GOTTSCHALK, S.: THE DEVELOPMENTAL HISTORY OF THE HUMAN PLACENTA (*Arch. f. Gyn.*, xxxvii, 2).—The literature concerning the primitive design of the human placenta abounds in altogether contradictory views; this is not due to a lack of thoroughness in investigation, but to the paucity and variability of the material which is criticised. It will only be possible to study the various phases of placental development when we are able to examine preparations obtained from the living body during the first half of pregnancy. Such preparations, however, must contain the ovum in unaltered attachment to the uterus; such can, of course, only be obtained accidentally during operations in the pelvis, and the investigation cannot be compassed by individual observers. The conclusions of those who have given the matter careful study vary considerably. Some deny absolutely that the chorionic villi grow into the uterine glands, while others declare this to be the only, or at least the most important, mode of development; the one school attributes the active rôle to the chorion, the other to the decidua; only a few agree with Leopold that there is an intergrowth between the chorionic and decidual villi. The sections from which G. makes his conclusions were embedded in paraffin and stained with pierolithion-carmin or with hematoxylin. The border between villi and decidua appears to the naked eye as a finely serrated line. This character of the border line is due to a papillary proliferation of the decidua serotina; the decidua serotina is 11 mm. thick; the length of the villi averaged 9 mm.; the uterine musculature was 1.6 mm. at the placental site. The epithelium of the mucous membrane was lost. It could be seen that the greatly

Fig 1



Fig 2

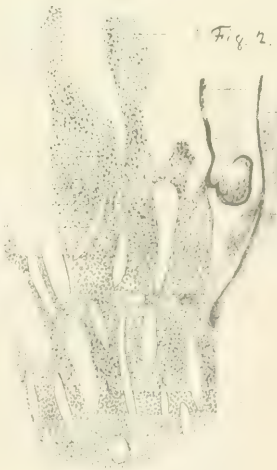
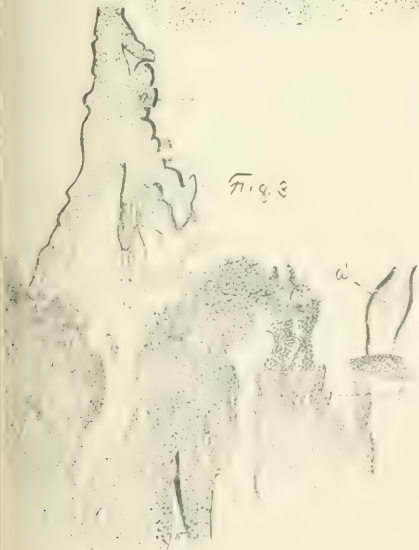


Fig 3



THE EARLY DEVELOPMENT OF THE HUMAN PLACENTA.

(GOTTSCALK.)

thickened interglandular tissue, totally transformed into decidual tissue, sent pointed or globular branches to meet the villi. The villi could plainly be seen penetrating the lumina of the glands and connecting with the neighboring decidual tissue through the glands by branchlets. In a single section one could come across three varieties of connection—one or more villi are found penetrating the glands, others intergrown with papillary decidual offshoots, and, finally, villi embedded in the crypts of the surface; the latter are generally daughter-villi of the first. While the villi which penetrate the glands generally easily break through the glandular walls to obtain the necessary foothold in the interglandular tissue, others are seen projecting deeply into the glandular bases, others again which transversely traverse the lumina of glands and project into neighboring ones; these villi are distinguishable by their larger size, and appear to make the groundwork for the connection between chorion and decidua serotina. The generally bifurcated villi grow into the branchlets of the serotina, the decidual tissue proliferates in the spaces between the pair of villi to unite to the common villous stem. The author found nothing to corroborate the recent statement of Strahl that the glandular openings are nearly or entirely closed; they were generally found dilated, especially near the surface. The decidua at the site of union is in a state of active proliferation. The lymphatic system is richly developed. The nearer the villous offshoots come to their goal, the broader the ova—partly from augmentation of the plasma, but principally by addition of numerous round nuclei. The author gives an elaborate description of the various histological phases of the placenta, exceedingly interesting and instructive, the value of which is greatly enhanced by numerous well-executed plates, three of the figures of which are here reproduced.

L. R.

DESCRIPTION OF PLATE.

FIG. 1.—Villi intergrown with decidual tissue (61 diameters). *aa*, Villi, also *a''*, *a'''*, *a''''*; *a'*, villus embedded in a crypt. *b*, Villous epithelium, covering the surface. *c*, *c'*, *c''*, Dilated lymphatics of the serotina with giant cells. *d*, Largely-dilated vessels, from which later the intervillous spaces develop; also, *d'*, *d''*, *d'''*, *d''''* (*dd⁵*, *6*, *7*), more deeply situated. *e*, *e'*, Glands. *f*, Decidual giant cells, close to the surface. *g*, Greatly twisted arteries.

FIG. 2.—Villus in a gland, about growing into it (32 diameters). *a*, *a'*, Villi. *b*, Blunt offshoots of the interglandular tissue. *c*, *c'*, *c''*, *c'''*, Dilated artery. *d*, Gland.

FIG. 3.—A trebly-branched villus growing into a widely dilated glandular opening by its middle branch (*a*). *a'*, Villus in a gland, penetrating its wall. *b*, *b'*, *b''*, *b'''*, *b''''*, Glands. *c*, Widely dilated artery, later intervillous space. *d*, Depression in the uterine surface, a villus branch growing into it.

2. DÜRSSEN, A.: RUPTURE AND SUPPURATION OF THE PELVIC JOINTS DURING LABOR AND THE PUERPERIUM (*Arch. für Gyn.*, xxxv., 1).—The author's opinion is that, contrary to

what is generally laid down in the books, in a large proportion of cases of suppuration of the symphysis the prognosis as regards life is entirely favorable. He narrates a case of his own in which rupture and suppuration took place in the symphysis, which was treated by incision with antiseptic precautions, and which made an excellent recovery, with firm union, free movement of the legs, and no pain or callosities at the seat of union. In addition he gives the histories in detail of 32 cases collated from the literature of the subject; of these 32 cases, 24 were treated without, 8 with incision; of the 24 cases, 17 died and 7 recovered; in the latter the pus had free exit externally. He thinks that we may only hope for recovery in cases of spontaneous rupture of an abscess of the pelvic symphyses when the rupture occurs before deep-seated suppuration has taken place, and the pus has free outlet. He states the prognosis about as follows: If the suppuration is associated with general septicemia or pyemia, the prognosis depends upon the course of the puerperal fever—the latter being generally unfavorable. If it be possible to successfully combat the puerperal fever, healing takes place in case the pus, whether through incision or spontaneous opening, has free outlet. If, however, the pus is retained, death follows from secondary pyemia. In all other cases of isolated suppuration, even though the latter depends upon pyemic trouble, the outlook is favorable if incision be made early; if we allow the case to go without interference, recovery seldom ensues.

As regards the etiology of this trouble, in general we may infer that it rests upon metastatic inflammation, as the suppuration in puerperal fever; in some cases this explanation is not tenable. Tubercular inflammation is a factor which must also be recognized, although occurring rarely; other cases may be due to an infection the nature of which is not clearly understood, causing a purely local inflammatory process.

But, above all, the author contends that the prognosis of this affection depends mainly upon the therapeutics addressed to it—treatment by incision and a bright outlook, or treatment by the "expectant" plan and almost certain death. If the symphysis remains painful despite careful bandaging, and if a swelling forms about the symphysis accompanied by remitting or intermitting fever, incision should be made; we should only wait for fluctuation when the general condition of the patient is unaffected. Abscesses may be opened through the vagina or in the gluteal region. In cases of fever during the puerperal state for which no local cause appears to be present, the pelvic symphyses should be carefully examined by the internal and external touch.

L. R.

3. OTTO, D. VON: CESAREAN SECTION (PORRO'S OPERATION) IN A CASE OF PREGNANCY COMPLICATED WITH FIBRO-MYOMA OF THE CERVIX (*Arch. f. Gyn.*, xxxvii., 1).—The patient was a Russian woman, 30 years old, always of delicate constitution; she had menstruated regularly since her seventeenth year; married two years. Upon examination the patient was found to be exceedingly emaciated; the abdomen was enlarged by an irregular swelling, principally in the lower portion; the growth appeared to consist of several parts, consisting of separated, uneven masses, some intimately, others loosely connected with the main growth; the latter were more movable, and adherent by small surfaces. One of the nodulated and very hard masses was in the right hypochondrium, and connected with the right and upper portion of the main growths; it reached to the ribs, formed the uppermost border of the tumor, and was about as large as a man's fist. A similar, somewhat smaller, and almost immovable mass occupied the left hypochondrium. Several small tumors could also be felt, closely united and attached to the main tumor. The consistence of the growth was very hard, excepting that portion in the median line above the pubic bones. Palpation caused moderate pain. The tumor could not be moved at all in an upward direction, and but slightly from side to side. Percussion flat. By internal examination the vagina was found to be irregularly stretched, its cavity pressed together by a tumor lying behind it, and which pushed the entire vagina forward. The posterior cervical lips continued uninterruptedly into a rounded body of great hardness which filled the small pelvis; it was entirely smooth, not sensitive; it was not immediately in contact with the pelvic bones, but allowed of a little room in which it was slightly movable. All attempts, however, to press the body out of the small into the large pelvis were unavailing, causing considerable pain to the patient. The diagnosis was fibro-myoma, partly subperitoneal, partly interstitial, complicated by pregnancy in the fifth month. It was decided to wait until the fetus was sufficiently developed to bear extra-uterine existence, and to then remove the mass by laparotomy. During the interval the patient remained most of the time in bed, becoming more and more feeble and suffering constant cramp-like pains, especially in the right side of the tumor; had very little appetite and constant cough, without, however, any tubercle bacilli being found in the sputum; disturbed sleep. It was decided to operate on the two hundred and sixty-third day of pregnancy. Incision in linea alba; rubber ligature applied above the tumor in the cervix. On opening uterus an apparently fully developed male child, which cried lustily, was delivered by the breech; separation and removal of the placenta, moderate bleeding, amputation of ute-

rus, and removal of ovaries, including all the fibromata, excepting the portion situated in the small pelvis. On account of large size of the stump it was converted into two lateral lips and replaced in the abdominal cavity. Considerable colic the first days after operation. An abscess formed in the lower part of abdomen, along the linea alba, which opened spontaneously. Washed out with weak sublimate solution, and drained; the fistula remaining discharged moderately, and patient made a good recovery. The fibro-myoma remaining in the small pelvis became notably smaller in size, softer to the touch, and not sensitive. The child was given in charge of a wet-nurse and is flourishing. The author concludes that this case goes to prove that even in serious cases the intraperitoneal treatment of the pedicle is the most feasible and gives good results.

[The favorable outcome of this case, however much honor it reflects upon the skill of the author, must be regarded as altogether too fortunate a result to serve as a safe guide in analogous cases. The patient was very greatly reduced in flesh and strength, and presented an almost cachectic appearance; she suffered constant pain, had very little appetite, and what she did ingest was followed by exhausting digestive disturbances. It was only with the most painstaking care and skilful management that her life was sustained up to the date of operation, during which time she was generally a bed-ridden invalid. Any of the ordinary accidents to which human beings—not to say a pregnant woman with grave pathological processes in her abdomen—are liable would of necessity have had a disastrous effect upon such an enfeebled subject. It may, therefore, be stated in all moderation that by far too much was hazarded in deferring surgical interference; it was a case where prompt measures were certainly indicated. Porro's operation is an extremely grave procedure even under vastly more auspicious circumstances. The tendency has been, in those cases where Cesarean section is indicated, to return to the more classic operation as modified by Säger and others, and which yields far better results than the operation of Porro. The mass which occupied the small pelvis in Otto's case, which offered an insuperable barrier to parturition, could have been enucleated per vaginam at the time or shortly after the condition of things was first recognized. In the Transactions of the American Gynecological Society for 1884 Mundé gives the history and treatment of a case in point: the growth, an interstitial fibroid of the uterus and cervix, was accompanied by pregnancy at about six months. Upon the day fixed for operation the patient was seized with violent uterine contractions, which were quieted by morphine hypodermically; the membranes suddenly ruptured, and the cord and one hand were prolapsed into the vagina. An incision

three inches long was made into the capsule of the growth, the mucous membrane reflected, and enucleation effected with the hands without much difficulty. A Thomas' serrated spoon was used in separating some of the firm adhesions; bleeding was very moderate; the fetus was easily turned, and it and the placenta removed. The patient made an uninterrupted recovery. The tumor weighed three pounds; it was eight inches in length, six in breadth, two and a half in thickness posteriorly, and twenty and a half in its greatest circumference. Its surface, with the exception of one spot, was smooth.]

L. R.

4. LEOPOLD, C. G.: ON SUTURING THE REPOSED RETROFLEXED UTERUS TO THE ANTERIOR ABDOMINAL WALL (*Sammlung Klin. Vorträge*, No. 333).—L. narrates the histories of six cases recently operated upon by him. In three the condition was complicated by chronic ovaritis and salpingitis; in one there was a very firm, immovable retroflexion consequent upon myoma of the fundus, and in two there was pure retroflexio uteri which caused great suffering. It is a self-evident axiom that the non-operative treatment of retroflexions must now, as formerly, be regarded as an extremely valuable course, especially the treatment by judiciously selected pessaries. It should be given a most thorough trial before breaching the subject of operation. But it is equally true that in a number of cases the patience of physician and subject is exhausted by prolonged and futile attempts at reposition by mechanical means. Cases, too, occurring among the poorer and working classes have no time for temporizing procedures. He lays down the following rules:

Ventral fixation of the retroflexed uterus is indicated (1) above all during the performance of ovariectomy and salpingotomy for chronic inflammation of the ovaries and tubes, whether the retroflexed organ be adherent or not; (2) in the removal of growths which hold the uterus permanently in a retroflexed position (subserous myomata of the uterus, tumors of the ovaries and parovarii); and (3) in pure retroflexion of the perfectly mobile, non-adherent uterus, when the suffering of the patient can be traced solely to this condition, and other known forms of treatment have been resorted to without avail.

The operation should be simple and trustworthy. The most important preparatory work consists in sundering the uterine adhesions, which, though often sparse and thin, are now and then very numerous and of cartilaginous consistence; the frailer one may be best separated by the index finger. Bleeding seldom follows, if carefully done; should it occur and continue, the part may be tamponed with a roll of iodoform gauze, which may remain in position till the close of the

operation. When the adhesions are numerous and firm the greatest caution is necessary; force should not be employed; what the fingers cannot separate should be cut with a knife or scissors; the sutures are so made that from one to three deep abdominal sutures pass through the fundus uteri and draw it to the abdominal wall. The first enters about one-half to one centimetre anteriorly to the tubal opening; the second between it and the third, one-half to one centimetre behind it, going transversely under the serous coat of the uterus and about two to three millimetres deep through the upper muscular layer. The three sutures should be long, so as to be readily differentiated later on. The abdominal sutures are removed from eight to twelve days later, the three fixing the uterus remaining until the fourteenth or eighteenth day; by this time the fundus is firmly adherent to the abdominal wall. In order to render the latter more certain, the serous surface of the uterus is scooped off at the point of apposition to the abdominal wall. The author finds this almost essential.

None of the cases were required to wear a pessary after they had recovered; there was no disturbance of menstruation. The author concludes that the operation is still far from the ideal. The position of the organ is a forced one. In cases of pure retroflexion, and after the removal of tumors which have for years caused retrodeviation of the uterus, the operation will for some time to come have to suffice. But in the more frequent cases of chronic oöphoritis and salpingitis with retroflexio uteri, which require complete castration with ventral fixation, it becomes a question whether it would not be better to remove the uterus and ovaries entire per vaginam; the uterus after castration is useless.

L. R.

5. MARTIN, A.: ON PARTIAL EXTIRPATION OF THE OVARIES AND TUBES (*Sammlung Klin. Vorträge*, No. 343).—The attempt to remove only the unhealthy portion of a partially diseased organ, and allow the sound tissue to remain, has frequently been made. The author gives seventeen cases in which either the ovaries or tubes were in part excised—ten cases of partial excision of the ovary, seven cases of resection of the tube with removal of the adnexa on the other side. The ten oöphorectomies resulted in uninterrupted healing, with resumption of normal menstruation. Three cases subsequently conceived. The diseased parts generally consisted of follicles or cysts. The seven cases of tubal resection had a similarly favorable outcome. In all but one the subsequent condition of the patients was very good; in that case secondary laparotomy was performed for miliary cystic degeneration of the residue.

L. R.

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PERITONITIS IN THE FEMALE—ITS CAUSES, EFFECTS, AND
TREATMENT BOTH PROPHYLACTIC
AND IMMEDIATE.¹

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THAT peritonitis occurs much more frequently in the female than in the male is a fact well recognized by the most ordinary practitioner of medicine. Peritonitis in the male always portends evil, either as indicating some cause that has arisen suddenly, or the existence of an organic lesion of long standing within the peritoneal cavity. Whether it be from traumatism or secondary to organic disease, our anxiety as to the result is very material and is justified by the clinical results. We are so familiar with peritonitis in women that, unless it becomes very general and severe, we feel comparatively safe, and expect a large majority to recover, with more or less perfect return to health. So great is the difference as to results in the two sexes that, without entering into statistics, I think

¹ Read before the Maine Medical Association, June, 1890.

it may fairly be said that, as a general rule, peritonitis in the male is fatal, while in the female the reverse is true.

Accepting this as a base for argument, it follows that there must be some radical difference in the causes operating to produce the disease. Traumatism is much more frequently a cause among males, for obvious reasons. Injuries arising from severe manual labor, gunshot wounds, stabs, blows, exposure to cold, etc., are of far more frequent occurrence among men than women. Beyond these comes peritonitis as a complication arising secondarily to organic disease of the liver, spleen, or other abdominal organs.

Unquestionably the most potent cause of fatal peritonitis in the male is that arising from concretions or foreign bodies in the appendix vermiformis. I think this much less frequent in the female. Within the past few years I have, with many others in the profession, been very much interested in observing the reports of this class of cases, particularly as bearing on the causes of peritonitis in the two sexes. I am sure one will become convinced, by a careful examination of the current literature, that by far the larger number of cases of perityphlitis from appendicitis will be found in the male.

Homans has recently reported twenty-six cases—twenty males, six females. Dr. Worcester, of Waltham, reports eight operations for perforating appendicitis, all males. These are reports in only a single journal. The other American journals bear about the same testimony, while the English medical literature is not essentially different.

Another quite significant fact in this connection is, the cases occur generally in comparatively young and vigorous males, many even in children. The average age in Homans' cases was thirty-two, only one case as old as fifty. So far as I know, no writer has attempted to explain this peculiarity, or to show why males should be more subject to appendicitis.

The causes which produce peritonitis in the female are, to a great extent, widely different from those producing it in the male. While we occasionally find it due to traumatism and appendicitis, a much larger percentage is due to differences in the anatomical arrangement of the pelvic organs. From the vagina we have a direct canal leading to the peritoneal cavity, and through this may enter the septic material

which is constantly accumulating at some point along the track ; a simple vaginitis may extend along the endometrium and involve the Fallopian tubes. The specific form is particularly liable to do this, and we therefore find the most destructive results occurring with or after a gonorrhea. Even years after the acute effects of this disease are passed there is left a septic condition which may be awakened into active and severe inflammation, with the resulting pyo-salpinx, closure of the tubes, and adhesions about the uterine appendages.

Ordinary inflammation of the endometrium, if not immediately dangerous, may leave a state of chronic passive congestion from which slight exciting causes, such as colds, the introduction of instruments, coition, violent exercise or jars, cold-water injections—especially where any is thrown into the uterus (as may happen if the os and canal be patulous)—may easily develop a new acute attack.

Abortions are a most fruitful cause of some of the most violent and fatal cases of suppurative peritonitis. From the period of puberty many girls, through ignorance or carelessness, acquire a congested condition of the endometrium from which they never recover, and at every menstrual period suffer more or less from acute attacks of inflammation that involve not only the uterine cavity, but extend along the tubes into the peritoneum, each time leaving exudate which binds everything together in a solid mass. Dysmenorrhea, menorrhagia, and leucorrhœa follow for the rest of life, unless relieved by heroic measures. The uterine cavity, from this long-continued passive congestion, becomes the seat of granular degeneration or fungous growths, which of themselves become sources of sepsis.

In one of the most elaborate and exhaustive articles on peritonitis recently published, Jacobi, of New York, writes as follows :

“Among the most frequent causes of peritonitis are catarrhal and inflammatory diseases of the female sexual organs. Besides the opportunities of menstruation, there is no more frequent mischief than that originating in the sexual function. Cohabitation is sometimes, the puerperal state very often, the cause of persistent peritonitis. The most frequent cause of peritonitis is a preceding peritonitis. When a case is exam-

ined after death, the most positive proofs are found of one or more attacks preceding the fatal one. If this is not the proximate cause of death, at all events the main cause may be set down to have been a previous attack.

"I do not remember a case of perityphlitis but what exhibited the adhesions and contractions due to a former peritonitis; frequently the vermiform process was attached to the side or posterior to the colon, the tissues of the intestines were thickened, the parietal peritoneum whitish and thickened, and the orifice patent. It is probable that few if any foreign bodies enter the process, unless the latter have previously lost its elasticity and contractility by an inflammatory change."

The close proximity of the Fallopian tube of the right side and the appendix vermiformis renders the latter organ extremely liable to become involved in a peritonitis extending from the tube, and the general and local symptoms are so nearly like those of appendicitis and typhlitis arising from perforation that, unless this element of tubal cause be recognized, frequent mistakes in diagnosis and treatment will be made.

Dr. J. Blake White, of New York, reported a case before the New York Obstetrical Society, October 15th, 1889, where all the symptoms of obstruction were present, vomiting, pain, etc., with a well-marked tumor which could be felt per vaginam and rectum—in fact, everything that pointed to abscess in the right iliac fossa as a result of perforating appendicitis. Post-mortem examination showed a pyo-salpinx and abscess of vermiform appendix in one mass. In the discussion which followed this paper, the president, Dr. Hanks, says: "In women, I believe, in the vast majority of cases of this kind, the cause is in the region of the tube or ovary." My own experience fully justifies this view of the case. Of course, when peritonitis is established in the pelvis it may not limit itself to the fossa and become circumscribed, but go on and involve the general peritoneum, diffusing pus throughout the entire cavity in one mass, or, to use Dr. Wyllie's language, in "puddles" here and there.

The following cases from my own practice will illustrate the principles thus far discussed.

CASE I.—Mrs. M., age 28, residing in a neighboring town, had, six weeks before I saw her (in consultation), miscarried as a result of criminal abortion. Septic peritonitis followed, and at the time of my visit the abdomen was filled with fluid

which I believed to be pus. An abdominal section was advised and assented to by the friends, when at least fifteen pounds of pus were taken out. The pelvic organs were massed together, and each Fallopian tube was as large as my index finger and solid from the inflammatory exudate. Both tubes and ovaries were removed, the parts thoroughly washed and drainage established, and for a time everything progressed well; but after two weeks she died from the exhaustion consequent on the extensive suppuration. The attending physician said the abdomen had been full of pus for at least four weeks before I saw her. The constitutional symptoms of rigors, sweating, had been well marked during this time, and although she seemed almost at death's door when I operated, yet she rallied for many days after removal of this mass of pus and exudate (which I removed in immense flakes).

In this case there is no doubt the exciting cause came from the uterus through the tubes.

CASE II.—Mrs. M., age 49, had suffered from uterine fibroid (submucous) for several years. Had repeated severe hemorrhages, for which she consulted a Boston physician (homeopathic), who advised and performed curetting, without ether and without any assistance. To use her own language, "He nearly murdered me," and left her without any special directions as to after-treatment. After six weeks of severe peritonitis she was brought to Maine, where I saw her in consultation and diagnosed a suppurative condition behind the uterus. Her extremely feeble state contra-indicated any operative interference, especially as the tumor was quite large, and she finally died. Post-mortem revealed an abscess behind the uterus containing a quart of pus, and the tumor much reduced in size. I feel sure that the curetting, perhaps with unclean instruments, and the shock to the nerve centres from the non-administration of an anesthetic, were the cause of endometritis and subsequent peritonitis, which extended through the tubes.

CASE III. *Criminal Abortion*.—Post-mortem showed both tubes suppurative, very much thickened by exudate, pelvic cavity filled with pus, and "puddles" of pus in various parts of abdominal cavity; intestines glued together in a mass, peritoneum gray and very thick.

These are illustrative cases of general peritonitis, some of which produced large quantities of pus in the general cavity, others showing pools of pus in different localities. In all of these and many others within my own experience, the whole history of the case pointed unmistakably to the uterus and tubes as the source of the septic influence.

The following cases show a localized peritonitis simulating perityphlitis from the usual cause in males, viz., appendicitis.

CASE IV.—Miss B., age 34, when about 17, at boarding school, was attacked with what was called, at the time, perityphlitis. It came on from exposure to cold and wet at menstrual period. The attack lasted two or three weeks, and from her account was severe, with high fever and much suffering. From that time her menstrual periods were always painful, and for the last few years excessive in quantity and frequency, with a profuse leucorrhea at intervals between. She also suffered from premenstrual pains, especially in the region of the right Fallopian tube. She rarely made any difference in her habits during menstruation. The result was that exposure to cold, dancing, and excitement necessarily induced a chronic passive congestion which easily lighted up into inflammation of more or less severity. About the last of August of the past season, while at the mountains, she was taken with severe chill, followed by high temperature and severe pain in right iliac fossa. I saw her in consultation four days after the attack, and agreed with the attending physician that it was a case of perityphlitis, but, from the history of the case, in my opinion not due to appendicitis, but to septic influence coming from the Fallopian tube, which by extension had involved the appendix and cecum. Acute obstruction of the bowels existed, and temperature ranged from $102\frac{1}{2}^{\circ}$ to 104° each day. We stopped opiates as much as possible, and began the use of small doses of Seidlitz powders, as frequently repeated as the vomiting would allow, while at the same time enemata of various kinds were kept up. I could feel a tumor per vaginam and rectum, but did not feel justified in operating. At the end of the ninth day, by the use of the long rectal tube, I succeeded in getting an enema of oil and glycerin to remain, and on the tenth day a movement containing fecal matter was induced. On the eleventh day full discharges

were obtained and the case was practically convalescent. Within a few days the abscess gradually disappeared, and she regained her general condition as before the attack. Two months later I dilated and curetted the uterus, scraping away quite a quantity of fungous growth, and applied pure carbolic acid, with a drain of iodoform gauze for two days. Since that she has greatly improved, flowing but four days and suffering very little. The leucorrhea—which was of a most ichorous character, producing intense smarting, itching, and soreness of the vagina—is small in quantity and non-irritating. She has an ovary of the left side as large as an orange, also enlarged tube of same side. I feel very sure that had a lateral laparotomy been made in this case her chance for life would have been much less.

CASE V.—Mrs. D., age 29, mother of one child eight years old, one miscarriage since, never very well afterwards; subject to pain in right side, occasionally extending down inside of thigh of that side; menstrual periods irregular, flow at times profuse and occurring twice a month, again going six or seven weeks; leucorrhea following menstruation. In October last had a long, dragging, painful menstruation; left her with pain in right iliac region. In November was in Boston during period, and kept busy shopping by day and at theatre at night. In the course of a week rode about a thousand miles by rail in addition. On returning home was obliged to go to bed on account of exhaustion. She recovered so as to be about, but on the 9th of December was taken with a severe attack of localized peritonitis, which the physician diagnosed as perityphlitis. At the end of a week, finding high temperature continuing and obstruction of bowels, I was telegraphed for to go prepared to make laparotomy. The attending physician had been persistent in the use of enemata of salines and oil, using as little opiate as possible, and small doses of salines by mouth, so that when I arrived (a distance of four hundred miles), two days after the telegram was received, the patient had had two good movements and was out of all danger.

The previous history in this case was much like the former, and I have no doubt the peritonitis originated in the same way.

I advised curetting in this case before the next period,

which was done, and I learn that she has been much better this winter than for a long time before. Menstruation regular and normal.

CASE VI.—Mrs. R., age 36, one child 12 years old; never pregnant afterwards. Shortly before her marriage had an attack of pelvic peritonitis, beginning at a menstrual period; ill for several weeks; never felt quite right in right side after that. In September last began to have pain in right iliac fossa, which extended down inside of right leg, so much so as to compel her to draw it up when in bed. That continued all winter until the 1st of March, when she went to Boston for a week's shopping and visiting. Saturday afternoon while in the theatre was seized with a chill and pain in abdomen, with nausea. She got some temporary relief, but was feverish Sunday and Monday, when she returned to Maine via Portland, and on Tuesday drove sixteen miles by carriage over the rough country roads. Had another chill Tuesday night and local pain in right side. Temperature 102° ; pain increased in severity, so as to require one-half grain of morphine every four hours to keep her at all comfortable. On Friday the attending physician discovered, as he thought, a tumor from the outside, in the right iliac region, and telegraphed me to come prepared to operate for perityphlitis. Not being at home Friday evening, he telegraphed again on Saturday morning, but I did not arrive home until Saturday noon, and, supposing he had called some one else, did not go. Saturday evening he sent a man for me. I went out Sunday morning and found a well-marked pyo-salpinx as large as a good-sized orange. The parts about the cecum also had a hard, board-like feeling. No movement since Wednesday; vomiting at intervals; temperature $102\frac{1}{2}^{\circ}$. The slightest pressure over the iliac fossa gave intense pain, so that it was difficult to make deep pressure from the outside. The history of the case led me to believe that the Fallopian tube was the seat of original trouble, and I decided not to operate. I ordered saline cathartics in small doses frequently repeated, and a concentrated solution of Epsom salts (two to three of water and one of glycerin) by rectum. During the following night copious watery discharges were obtained, and the next day the pain abated, temperature declined to 100° , and she im-

proved in all respects. On the following Wednesday I saw her again, and found the tumor very much diminished, and her recovery has since rapidly followed. The serous portions of the pus have been absorbed, and the rest will undergo caseous degeneration and absorption. I feel sure that laparotomy would have been unwise at that time. Five weeks later I made laparotomy, and found the right ovary the seat of abscess, containing a pint of pus. It ruptured in handling, but with the tube of the same side was removed, and she made a perfect recovery.

In all of the last three cases the physical signs and constitutional symptoms pointed as strongly to perityphlitis as in any case of localized peritonitis in this region in the male. They illustrate a large class of such cases in the female, and if carefully diagnosticated are, I believe, better treated by medical than by surgical means. After the acute symptoms have passed, adhesions may be left, matting the tubes and ovaries together, destroying their function and causing suffering, in many cases, which can be relieved only by laparotomy. The danger, however, is then much decreased if laparotomy be found necessary.

There is still another class of cases of peritonitis, coming from the same cause, not producing pus, but oftentimes very extensive adhesions and continuous suffering. This is principally confined to the pelvic organs, although it not infrequently becomes quite general and the intestines are adherent, not only to themselves but to the pelvic and abdominal walls. Where it is limited to the pelvic peritoneum, we often find displacement of the uterus and uterine appendages, the whole massed together and the adhesions very strong and abundant. In the last three cases where I have operated for the removal of the uterine appendages, it was with a great deal of difficulty I could detach the parts, and the organs were practically changed in all respects by the repeated attacks of inflammation. In many of these cases it would be difficult to recognize the masses removed as ovaries or tubes, so much destruction had taken place. Sometimes a cirrhotic condition exists, the ovary being extremely small and hard, and the tube impervious. In one instance the function of menstruation was entirely suspended, having grown less and

less for months before, while the woman was comparatively young, not more than 35. Such cases become the chronic invalids, enduring for years the most painful dysmenorrhea, with pelvic neuralgia, severe pains running down the inside of the thigh of one or both sides. I can now recall as many as four cases where one leg was practically useless. One in particular, who had not walked for fifteen years, recovered in three months after an operation, so that she was able to walk quite a distance unaided.

Of all the forms of peritonitis, this last class (the non-suppurative) is by far the most common and the least amenable to treatment by ordinary means. That the cause is the same as in the other classes, viz., sepsis from the uterus through and involving the Fallopian tube, I have no doubt. To show that I am not alone in this belief, I quote the following recent authorities:

Henning states that at least "three-fourths of the post-mortem examinations on women show inflammatory disease of the Fallopian tubes." Winckel found two hundred and five in five hundred post-mortems. Among American writers, Thomas, Polk, Hanks, Wylie, Dudley, and others report almost numberless cases. Waldo, in a paper read before the New York Obstetrical Society, November 19th, 1889, says "at least one-half of the post-mortem examinations on women show inflammatory disease of the Fallopian tubes."

They all agree that the cause comes from disturbances arising in the uterus. Bandl states that pyo-salpinx may be developed in two different ways: "First, a chronic process causes a hydrops tubæ, which is changed to pus by an acute attack of inflammation. Secondly, it can be *rapidly* produced by an acute process. A catarrhal secretion in a tube is easily changed to pus by infection from a simple examination, more especially from an intra-uterine, when strict antisepsis is not resorted to."

"The indiscriminate use of the sound is probably the cause of a great deal of pyo-salpinx."

DIAGNOSIS.

The chief points of diagnosis have appeared in the discussion thus far, but a glance at the differential diagnosis between the cases in the female that simulate true perityphlitis (from per-

foration either of the appendix vermiformis or cecum) may be interesting, for here is where the principal difficulty arises.

Within the past five years I have carefully collected and read the cases of appendicitis that have been reported in the various journals that have come under my observation, and watched with much interest the clinical features of the cases that have occurred in my own and others' experience, and one of the most striking and significant facts gathered from this observation and experience is the *remarkably low temperature* in a very large majority of the cases of peritonitis arising from the sepsis coming from the intestinal canal. While inflammation is always the same process, so far as the production of exudate is concerned, yet the degree of fever and disposition of the products of inflammation seem to depend upon the cause that originated the inflammation. That the poison coming from the intestinal canal is much more virulent and depressing to the nerve centres than that from the uterus will, I think, be apparent. It is a well-known pathological fact that purulent results arise from the most depressing causes, even though unattended with high temperature. In reports of cases of perforating appendicitis by Treves, MacDougal, and other European writers, it is a very rare thing to find temperature rising above 101° . MacDougal says he has "almost never seen an exception to this rule." Homans in his report of twenty-six cases gives but one where the temperature rose to 103° . Many of his cases did not reach above 100° , and one (a very severe case) was subnormal in temperature (97°). In a case to which I was called at the end of a week and made laparotomy, and found in the central line an abscess containing a pint of stinking pus, with perforation of the appendix, puddles of pus in various localities, and gangrene of several feet of the intestines, the temperature never rose above 100° .

On the other hand, as a rule, in all similar cases in females arising from the Fallopian tube the temperature is generally high, rarely falling below 102° during the acute process, and often reaching 104° . In this respect, therefore, we find a marked difference, which will aid materially in our diagnosis. Another prominent clinical feature is the suddenness and violence of the attack, with no premonitory symptoms, in cases of appendicitis. The patient may even be awakened from sleep

with pain which literally doubles her up, accompanied with violent retching and vomiting, which is often spasmodic.

In the tubal cases there is generally a history of more or less discomfort and pain for days before, and not infrequently the attack is at or near a menstrual period.

These symptoms, together with the testimony offered by vaginal examination, will become important evidence in making a correct diagnosis.

TREATMENT.

This may be in part inferred from the discussion of the illustrative cases given above.

I believe much is to be done in the way of prophylaxis in women suffering from any of the conditions alluded to. Acute attacks of endometritis that may or not involve the tubes are almost sure to leave a state of chronic passive congestion, from which we get menorrhagia, leucorrhea, and granular degeneration of the mucous membrane. Dysmenorrhea, pain in the iliac fossa of one or both sides, are among the significant symptoms that should call the attention of the gynecologist to the danger that may arise when exciting causes are present. Such cases should be well dilated, curetted carefully, washed out with hot water or sublimate solution 1 to 2,000, and the cavity thoroughly touched with pure carbolic acid. I like this better than any other remedy. Of late I have dilated after applying the acid, and then introduced a slip of iodoform gauze to the fundus uteri, allowing it to hang out into the vagina. I keep this in position for two days, in order to thoroughly drain the uterus and deplete the lining membrane of the tubes. If this be thoroughly and carefully done, I believe we may prevent many of these women from suffering the acute attack from which they otherwise would be in constant danger. In none of these cases should trachelorrhaphy be done at the time of curetting. Even if necessary where an attack of peritonitis has actually begun, I think the first and most important therapeutical resource is free catharsis from salines, preceded sometimes by the calomel triturations if the stomach be irritable. If these fail to act promptly I supplement by an enema of a concentrated solution of Epsom salts. I find the following formula very effective:

Magnes. sulph	℥ ij.
Boiling water	℥ ii.
Glycerin	℥ i.

It acts very promptly and thoroughly, stimulating the entire intestinal canal, producing profuse watery discharges, and rapidly reducing temperature and relieving pain. Opium should be withheld, unless the pain is intolerable. The enema alone often completely aborts the attack. Where the peritonitis becomes general and the signs of pus are manifest, I believe laparotomy, in the median line so that the entire cavity can be well irrigated, is imperatively required. Wylie has advised and practised making both a median incision and a lateral one, so that he could remove any pus that may have formed in the iliac fossa.

In the second class of cases, where the abscess is circumscribed in and about the Fallopian tube, I am sure that we will have much better results by treating the case medically, and allowing nature to dispose of the pus and exudate in the best way it can. If after a reasonable time, when all acute symptoms have subsided, the pus tube or ovary remains, I should advise removal.

In the third class, where peritonitis does not go on to suppuration, or, if it does, is absorbed afterwards, but results in adhesions, with severe and continuous suffering, complicated by marked impairment of function of the genital organs, much may be done early to modify the character of the adhesions and relieve the congestion of the pelvic vessels. A systematic course of local depletion by cathartics, leeching, glycerin, and pressure by tampons of wool, frequently repeated, will do much in this direction. In the later stages the use of iodized phenol to the vaginal roof and around the uterus, alternating with the large douches, may aid in promoting absorption; but a large proportion of this class will continue to suffer, and the process will be repeated again and again until all efforts to cure in this way are of no avail and our only remedy lies in removal of these offending organs. Then, and only then, will nature begin to assert itself and life begin to be worth the living. Time is necessary to change the perverted nutrition of the pelvis, and to cure the painful nerves which have been subjected so long to pressure.

EPIDEMIC DYSENTERY IN YOUNG CHILDREN.¹

BY

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I HAVE chosen this subject for my paper, not because dysentery is an infrequent disease in early childhood, but because there was a sufficient number of cases of acute dysentery prevailing in Washington during the summer of 1889 to constitute a mild epidemic. It is true that at this season one usually attends many cases of diarrhea in private and dispensary practice without suspecting any unusual cause for their prevalence; but when the simpler forms of diarrheal ailments are superseded by aggravated cases of dysentery, there must be a suspicion that something more than the ordinary etiological factors is at work. This suspicion is strengthened by the fact that in numerous instances the disease attacked several members of the same family, adults as well as children. It will be unwise to utilize the large number of cases treated in my service at the Children's Hospital, because the physician in charge failed to record the symptoms—an important desideratum in discussing a disease so likely to be confounded with others possessing common characteristics.

In discussing acute dysentery in young children, it must be understood that those diarrheal diseases accompanied by blood-streaked stools are to be excluded, as only typical forms of inflammation of the large intestine, characterized by tormina, tenesmus, and muco-sanguinolent evacuations, are to be included in the title.

Definition.—Dysentery is a specific miasmatic-contagious disease, with a characteristic local lesion. This local lesion is a catarrhal or croupous inflammation of the mucous membrane, solitary follicles, and tubular glands of the large intestines. It may be acute or chronic, sporadic, endemic, or epidemic.

¹ Read before the Washington Obstetrical and Gynecological Society, January 3d, 1890.

Morbid Anatomy.—The lesions are usually confined to the lower part of the colon, and are characterized by congestion of the mucous membrane, the color of which varies from a light red to a dark purplish and is never uniform; edema of the mucous and submucous tissues; and enlargement of the solitary follicles, from serous or bloody effusion, to the size of a small bean. Ulceration may take place. The ulcers at first are round, soon enlarge, two or more coalesce, their edges become everted and flattened, and they assume an irregular, serpentine, or rodent shape. Ulcerations in different stages of development may often be found in the same individual. Patches of pseudo-membrane may also be found. The blood supply of the mucous membrane of the large intestine is so limited that an acute inflammatory process may change the whole length of the intestine into a black, gangrenous mass. Cicatrization begins upon the floor of the ulcer, its edges being drawn towards the base. Perforation and peritonitis may result from the ulcerative process cutting through the intestinal walls. The liver, which is usually congested, may be the seat of multiple abscesses. The mesenteric glands are enlarged, softened, and of a dark blue color. In some cases the lower part of the small intestine may be involved in the dysenteric process. Bouchut found thrombi in the sinuses of the dura mater in thirty-five of the thirty-eight children who had died from dysenteric convulsions, and in the other three encephalitis. Busey verified by his cases the results obtained by Bouchut. Cerebral anemia, which is the commonly accepted cause of convulsions or death, may be found alone or co-existing with thrombosis of the sinuses of the dura mater.

Busey has observed, in a few fatal cases in very young children, edema of the lower extremities and discoloration of the skin of the legs and feet, which, with Bouchut, he attributes to the formation of thrombi in the pelvic veins, causing venous stasis and serous transudation into the subcutaneous tissues.

Etiology.—Dysentery is liable to prevail in malarial districts, and there are localities in which it is endemic, and others in which it is epidemic. It is due to a specific *contagium vivum*, capable of propagating itself, under favorable conditions, to an unlimited degree. The disease cannot be

communicated by inoculation with either the secreta or excreta. The contagium escapes from the infected individual in the stools, and must undergo certain miasmatic changes before it can infect a second individual.

It most frequently occurs in the autumn, when the conditions are present for the development of the typhoid-fever bacillus, which it so resembles in its infecting power. It never arises spontaneously.

The predisposing causes are impure air and water, exposure to cold and chilling of the surface, bad or insufficient food, and bad hygiene of the person and domicile.

Symptomatology.—The symptoms of dysentery are familiar to all. The temperature is usually elevated from 2° to 5° ; the pulse is rapid, small, and compressible; the strength is rapidly diminished and the face presents a pinched, pale, and anxious expression. There is constant desire to go to stool, with pain and straining during and after the evacuation. The stools, which at first contain fecal matter, soon become small and more frequent, containing blood and mucus, and have the peculiar dysenteric odor. The discharges vary in number from eight or ten to forty or fifty in twenty-four hours. There is seldom abdominal pain or tenderness on pressure. The tongue is moist and covered with a whitish fur.

As the disease advances the stools contain shreds, looking like "washed raw meat," mixed with blood and purulent matter. The straining becomes more severe, and prolapse of the rectum is a frequent result of it in children. The abdomen becomes tympanitic and tender along the course of the large intestine. The tongue becomes dry, with brown centre and red margin. Restlessness increases or delirium may be present. The urine is of a dark color and scanty, or there may be total suppression.

"Microscopically examined, the stools voided at the height of the dysentery are found to contain fat spherules, blood corpuscles, pus corpuscles, vibriones, triple phosphates, and traces of ingesta, all crowded into a molecular mass; while if examined in a test tube, the amount of albumen present causes the entire contents of the tube to coagulate on the application of heat."

The following cases will illustrate the type of disease which prevailed :

CASE I.—August 3d, 1889, Dr. W. J. Dillenback asked me to see this case with him. He had been called on the previous night to see it, and had learned that it had been under the care of another physician, and obtained the following history :

Dimple G., age 7 years, had been sick for five days with dysentery. The family physician had been in constant attendance during the early part of her illness, but latterly had neglected her. The bloody discharges had increased in number, the pain had become more intense, the desire to stool more imperative, and the evacuations were characterized as small, bloody, and slimy. She was then suffering from strangury produced by turpentine stupes, which had been used for several days. As she had grown worse, the physician was summoned, and on his arrival he pronounced the case severe but not dangerous. As she had had two hundred and eighty-one bloody, slimy stools in thirty-six hours (four hundred and sixty-three during the five days of her illness), and seemed to the critical eye of the parents to be ill, the family physician was discharged, and Dr. Dillenback was called to relieve her of the intense and painful desire to urinate. Dr. D. watched over the patient during the night, and by timely treatment prevented death by collapse.

When I saw her she had the appearance of being very ill. Her pulse was small, frequent, and compressible ; the eyes were sunken and the pupils dilated ; the cheeks were pale and sunken, and the lips livid and pinched ; the tongue was slightly coated and dry, and thirst was intense ; there was nausea but no vomiting, although she had vomited during the early part of the illness ; the abdominal walls were flabby, and there was no pain upon pressure over the abdomen. She had not slept for several days, and was continually begging for sleep. The discharges had become so frequent and involuntary that cloths were kept under the nates to catch them, and the stools were small, muco-sanguinolent, and offensive. There was great pain and straining ; the voice was almost inaudible, and the respiration was sighing.

Cerebral anemia was well marked, and the prognosis was

unfavorable. As she had frequent attacks of syncope, although not permitted to raise her head from the pillow, it was deemed advisable to keep constant watch over her, consequently either Dr. D. or an assistant remained in the house.

The usual remedies were administered per os and per rectum, and fomentations were applied to the abdomen. Stimulants and concentrated foods were freely given until the stomach and rectum refused to retain them, when brandy and finally ether were given hypodermatically. The attacks of syncope became more frequent, and she died of exhaustion and heart failure seventy-two hours after the first consultation.

This was the only case of dysentery in the family, whose residence is on the highest point within the city's limits. It was not possible to trace the cause to any known factor or to indiscretion in diet. She probably contracted the disease in Laurel, Md., during a recent visit, as dysentery prevailed there at that time to a considerable extent.

CASE II.—John B., age 22 months, was first seen August 6th, 1889. He had had bloody discharges for several days, and had been given several remedies for "summer complaint" prescribed by other physicians for other children. As he rapidly grew worse, I was summoned. He was running about the room, but frequently assumed the squatting position and strained. He had had fifteen or twenty bloody, slimy, offensive stools, and as many of "a stain of blood and slime," during the previous twenty-four hours. The pain did not seem to be severe, but he would strain until drenched with perspiration.

The diet was restricted to milk, and the directions carried out, except that of keeping him confined to his bed. Finally his symptoms became so much worse that he was held by one of his parents, but not recumbent. This modified rest seemed to do but little good, as the rectum was soon prolapsed to about one-half inch. As the disease did not succumb to the usual medicaments administered per os, I determined to try rectal medication. Enemata of laudanum and starch water failed, as did suppositories of opium and tannic acid. Finally, after treating the child for seventeen days without any apparent benefit, I resorted to suppositories containing one-sixth

grain of cocaine muriate, one-eighth grain of extract of opium, and one grain of ergotin, with a singular experience and happy result.

The first suppository was given about 11 o'clock in the morning. Very soon after its introduction the child became fretful, and had every one in the house waiting on him, but could not be pleased. He did not have another stool until the following morning, when he had several which contained more fecal matter and less blood and mucus. He did not need another suppository until that night, when it was administered at 9 o'clock. About fifteen minutes thereafter he became excited and restless, as he had been the previous afternoon, and remained so until early morning. In giving an account of his strange actions, the father, who had vainly tried to please him for six hours, said "he acted like a drunken man." Believing opium to be the exhilarating drug, I ordered suppositories of cocaine and ergotin. This combination stopped the tenesmus, but kept up the excitement. Then I ordered the ergotin and opium, which allayed the excitement, but did not prevent a return of the dysenteric symptoms. Finally the first combination with less cocaine was given, and the disease was soon cured.

This patient's nurse, a colored woman aged 40, had been treated by a homeopathic physician for ten days for dysentery. As she continued to grow worse, she discharged him and sent for me. I could not accept his diagnosis, as it seemed to be typhoid fever. After observing the temperature range for three days, and my suspicion being confirmed, she was sent to the Garfield Hospital, and passed through a typical case of typhoid fever lasting six weeks.

CASE III.—August 5th, 1889, I was called to see Nellie E., age 18 months, who had been suffering for several days with loose bowels. As the evacuations had become small, bloody, and slimy, the family were alarmed and sent for me. The child had a dozen or more dysenteric stools daily, accompanied by great tenesmus. The disease was controlled by a mixture containing paregoric and bismuth, and the patient was discharged in three days.

CASE IV.—August 13th, 1889, I was called to see Lottie E. (sister of Case III.), age 4 years, who had been taken sick the

previous day with symptoms similar to those experienced by her sister. The remedy prescribed for Case III. was given to this patient by the mother; but as the disease kept getting worse, I was summoned about forty hours after it had begun. The child was having frequent, offensive, muco-sanguinolent stools, accompanied by exhausting tenesmus. The pulse was frequent and small, and the temperature was less than 100° F. A mixture containing acetate of lead was prescribed, but failed to control the paroxysms. The symptoms rapidly grew worse, and she seemed liable to die at any moment from cardiac failure. The rectum protruded, became edematous, and blood exuded from the mucous membrane. The prolapsed gut seemed to be about two inches in length.

On the ninth day of the disease the dysentery yielded to the cocaine suppositories, and the child experienced the same poisonous effects of the cocaine. The prolapse lasted for a week longer. Recovery was complete.

It is worthy of mention that an aunt of these two children, who visited them during their sickness, was taken sick with dysentery about the same time Case II. was recovering. The attack lasted about a week and was controlled by the cocaine suppositories. She described the intoxicating effect of the drug, and became so hysterical that I thought it would have to be discontinued before her recovery.

The two children, Nellie and Lottie E., lived in a small frame house adjoining a slaughter-house, and in the cattle-yard was a tub of greenish, stagnant water. The children were accustomed to play in this yard and about the tub. Directly north of this house is a square partly occupied by negro shanties, but in great part by a pond of stagnant water. On the north side of the street bounding this square on the north lived a family that was probably affected by such unsanitary surroundings.

CASE V.—October 11th, 1889. Dot T. was brought to my office for aphthous stomatitis, which promptly yielded to treatment. On the 15th I was summoned to her mother's bedside to attend her with typhoid fever, which ran a typical course, lasting five weeks.

Dot was sent to her grandmother's, but was a frequent visitor to her mother. In a few days she was attacked with dys-

enterly, which, though obstinate, ran a mild course and was accompanied by prolapse of the rectum.

CASE VI.—October 18th, 1889, I was called to see John W., white, age 3. Five days after his cousin Dot (Case V.) had begun to have bloody stools, dysenteric symptoms showed themselves in him. The disease yielded to treatment, but he never recovered his usual good health.

November 18th I diagnosed typhoid fever, which was confirmed by the subsequent course of the disease. The patient recovered after a long convalescence.

The question would naturally be whether these were cases of epidemic dysentery or simply severe entero-colitis. Certainly, the unusually large number of cases of dysentery at the time mentioned, supplemented by the existence of several cases in the same family, which possessed periods of incubation, would support the presumption that they were due to some specific cause, and were not aggravated cases of entero-colitis, the result of indiscretion in diet or unusual meteorological conditions. The clinical features certainly conform to those seen in epidemic dysentery, especially the element of contagion.

The development of typhoid fever in the same houses with Cases II., V., and VI. might lead some to suspect that the cases reported were irregular types of that disease; but each disease possessed the clinical phenomena of its own type, so that the differential diagnosis was not difficult. In support of the specific nature of the etiological factor in these cases is the fact that the meteorological conditions prevailing during the spring and summer of 1889 were such as favor the propagation and spread of the miasmatic-contagious diseases, among which epidemic dysentery has been classed.

Diagnosis.—In sporadic cases of dysentery there may be some difficulty in differentiating it from acute intestinal catarrh in young children; but when the disease occurs epidemically, the diagnosis can be easily made.

In dysentery the stools contain mucus, blood, pus, scybala, and have a characteristic odor; tenesmus is always present, and the exhaustion is very rapid. In acute intestinal catarrh, when the blood is present in the stools, it is in streaks and not mixed with mucus; tenesmus is seldom present; the

discharges are profuse, and the pain is more intense and paroxysmal.

Prognosis.—The prognosis in simple acute dysentery in children is usually good. The ordinary duration is from eight to ten days, but it may prove fatal in twelve, twenty-four, forty-eight, or seventy-two hours. The favorable symptoms are absence of foul odor, diminution in frequency and improvement in character of the stools, and disappearance of tormina and tenesmus; the absence of nervous depression and of an anxious, sunken, and careworn expression of countenance; and increase of heart power and arterial tension.

The unfavorable symptoms are increased blood loss, ashy aspect of countenance, nausea, vomiting, hiccough, tympanitic and tender abdomen, nervous depression, sleeplessness, tossing about the bed, moaning, delirious cry, suppression of urine, convulsions, or other marked cerebral disturbances. When convulsions appear death is near at hand. Busey observes that in many cases death takes place under exactly similar circumstances, viz., one, two, or three convulsions, followed by coma and death; and in none of his cases did consciousness return after the first convulsion.

Treatment.—Before reading this paper I announced that it was incomplete and would be finished in time for publication. The treatment of the subject in general was not discussed. In the discussion which followed its reading, the different methods of treatment were thoroughly reviewed. Consequently if I should now complete the paper by giving the treatment, I would render the remarks of the members superfluous. Such being the case, I must refer the readers of my paper to the Transactions of the Society for the different modes of treating dysentery, most of which have been tested from time to time, and none of which are wholly reliable.

PUERPERAL ECLAMPSIA : EMBRACING A COLLECTION OF SIXTY-FIVE CASES.¹

BY

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PUERPERAL eclampsia is a disease of the greatest interest to the obstetrician, both on account of its dangerous character and the sudden and fearful nature of its symptoms. When we consider that, according to Lusk, one in eight of all deaths occurring among pregnant women is caused by eclampsia, we at once realize that there is no sickness to which the expectant mother is liable more deserving of careful, conscientious attention than this. In hope of throwing additional light upon this important subject, some two years ago I endeavored to collect statistics from the physicians of Highland and Clinton counties, O., in reference to it. From some 60 circulars sent out, answers were secured from 18; and so interesting did these reports prove that I deeply regret that more did not respond to the request.

Before giving the result of my inquiries, allow me to call attention to a few facts taken from authorities in regard to this subject, simply by way of refreshing the memory. From an examination of a number of writers I find that eclampsia occurs, as variously stated, from once in 250 or 300 to once in 600 labors. Lusk says "once in 500 pregnancies." Parvin says, "in this country, once in 250 or 300 labors." The English and Continental writers say "once in 500 or 600 labors." Fatality to the mother is variously put at from 14 to 30 per cent. Formerly it was not less than 50 or perhaps 75 per cent.

It is a settled fact that the disease occurs much more frequently in primiparæ and in twin pregnancies. It is stated that 8 in 10 cases of convulsions occur in primiparæ. The unmar-

¹ Read before the Ohio Southwestern Medical Society, Cincinnati, O., October, 1889.

ried, if so unfortunate as to become pregnant, are also more liable to attacks of eclampsia : also, it is thought by some, those who have been subjected to severe mental shocks or strain.

Convulsions are decidedly more frequent in the latter months of pregnancy, and they are very rare before the sixth month. As to their frequency in regard to the period of labor, the statistics of Braun and Wiegert show that in 449 cases of eclampsia 121 were before labor pains set in, 260 during labor, and 118 after the birth of the child. Verrier says that in 200 cases 60 occur during pregnancy, 100 during labor, and 40 after. Bartels states that in nearly one-third of the cases the dangerous symptoms cease after the birth of the child.

Etiology.—The statement of Lusk is probably near the truth when he says : “In the overwhelming proportion of cases, uremia is the fountain and the origin of the evil—the term uremia signifying, of course, the action, not of a single constituent of the urine, but of all the excrementitious principles combined with the increased arterial tension.” Tyson says that the majority of puerperal convulsions associated with albuminuria are due to acute nephritis, but adds : “I do not pretend to say it is impossible to have puerperal convulsions which are independent of Bright’s disease.” He then goes on to state that he has seen such cases himself, and says “they usually occur in primiparae, without dropsy or albuminuria, before confinement, the labor being severe and tedious.” He adds “that such cases always get well and seldom have more than one or two convulsions ; but when due to Bright’s disease the fits continue perhaps for twenty-four hours, and unless prompt treatment is instituted the patient is apt to die.”

Tyson further states that if the renal affection is not the immediate result of the puerperal condition, but has previously existed, the prognosis is very grave, though such patients may get well ; but a primipara who has had Bright’s disease before marriage is sure to die.

Dr. A. F. A. King, of Washington, takes the ground that puerperal convulsions are generally due to albuminuria and to cerebral arterial congestions—not cerebral anemia, as many hold—and that these conditions are largely due to compression of the aorta, vena cava, and their branches, and sometimes also the ureters, by the gravid uterus, on account of the faulty posi-

tion of the child, or, to use his own words, "in consequence of the child and womb not maintaining during pregnancy their normal lateral obliquity above the pelvic brim. The head should remain during pregnancy upon one of the iliac fossæ. Obliteration of the cervical canal and Bandl's ring during the later months are abnormal."

The descent of the child in the pelvic cavity during the latter months of pregnancy causes the pressure on the vessels and the resultant kidney and brain congestion. It is more apt to occur in primiparæ, on account of less abdominal room. Wearing corsets, and other bad habits, have an injurious effect in this direction. Dr. King shows, in confirmation of his theory, that very few cases occur in transverse presentations, nearly all in head presentations, and he makes allowance for the natural frequency of the latter in his calculations.

He also states that the postural treatment of eclampsia has in many cases been successful, and in some after the failure of other means. On the other hand, Bartels ("Ziemssen's Cyclopedia") argues against the mechanical theory, and shows, so far as the renal veins are concerned, that it is almost impossible for them to be compressed by the gravid womb, and that in simple uremia we do not have the symptoms of eclampsia. It has also been observed that in cases where the uterus has been obliterated by cancerous disease no convulsions occurred. Bartels simply says: "We do not know why the pregnant woman is so liable to nephritis, but must recognize the fact that she is so."

To my mind Tyson's statement as to the cause of Bright's disease in pregnant women is quite clear and satisfactory as far as it goes. He says: "The condition involves the accumulation in the blood of a large amount of effete and therefore poisonous matter; the woman is at once the eliminator of her own excretions and those of the child. The obstruction to the circulation, due to the compression of the vessels by the gravid uterus, doubtless adds to this, but is of itself insufficient to account for the kidney trouble."

Prognosis.—I will only add a very few words to what has already been said. Charpentier's statistics, quoted by Parvin, state that if the number of convulsions be from 1 to 10, one-fourth die; 14 to 20, one-third die; 20 to 50, one-half die.

Parvin says: "Eclampsia before is more grave than if it occurs after or during labor. The prognosis is more serious if the patient be suffering from cardiac or pulmonary disease. Death may occur from asphyxia during a prolonged tonic convulsion, but this is rare; the majority of patients die during coma, by a slow asphyxia. Others die from congestion or cerebral hemorrhage. The eclamptic is more liable to postpartum hemorrhage and to puerperal accidents, and a number surviving the convulsions may perish in the puerperal state. In the Guy Charity the mortality was 50 per cent in the cases which began before the onset of labor, 25 per cent in those which began during labor, and only 8 per cent of those which began after delivery—the total mortality being 25 per cent. In general the maternal mortality is 30 per cent. In the majority of those who do not die, recovery is complete."

Dr. Ettore Fruzzi, of Milan, says in old primiparæ eclampsia merits special attention on account of its relative frequency.

Puerperal convulsions may occur as late as four weeks after delivery. The symptoms that should excite suspicion in the pregnant state are dropsy, more general than usual (and yet the dropsy is rarely excessive), and the presence of albumin in the urine. The premonitory symptoms of the spasm are headache, blindness, pain in the hypogastric region, and very slow or very rapid pulse. It is a singular fact that amblyopia is much more frequent in puerperal albuminuria than in other cases of uremia; and also that the temperature is usually normal or depressed in uremic convulsions in the non-pregnant state, while in puerperal eclampsia it is generally raised to 101° to 104° during their progress. The duration of the spasm is usually but a few seconds, at most from two to five minutes. Tarnier met with one case lasting twenty minutes.

In treatment the general advice is that if the convulsions occur during pregnancy, especially before the child is viable, we should refrain from bringing on labor until a fair trial of remedies has been made: hot and warm baths, cathartics, diuretics—especially acetate of potassium and infusion of digitalis—tincture of iron, milk diet, and hypnotics; chloral, bromide of potassium, chloroform, postural treatment. If occurring during labor, bleeding from eight to sixteen ounces, chloral per rectum, chloroform, or veratrum may be employed.

Speedy delivery is advisable, if it can be safely brought about. Induction of premature labor is justifiable in grave cases when other means have failed.

After this hasty summary of the main points in the history of eclampsia, I invite your attention to a synopsis of the cases reported to me. The whole number of cases of labor reported by the eighteen physicians answering my inquiries was 7,829, but this includes the report of one who states his cases at 1,200, including premature labors and abortions. Now, according to the statistics of Dr. Dunn, as quoted by Dr. King, of Washington, D. C., in 4,049 cases of labor there were 228 premature labors and abortions. On this basis about 70 cases of the 1,200 should be placed in that class. This leaves 7,759 cases of labor proper. The whole number of cases of convulsions reported was 65—about one in 119 cases of labor. The physician who gave his cases of labor as 1,200, including premature labors and abortions, reported 15 cases of convulsions, but said he gave his report from memory and could state very little with accuracy in regard to them. Leaving this series out, we have 6,629 cases of labor and 50 cases of convulsions, or 1 in about 132, as the proportion of convulsions to labor. But we find that only 52 cases of eclampsia occurred in the united practice of the physicians reporting to me, the others being seen in consultation with physicians from whom I have no report; and if we leave out the 1,200 cases of labor with the 15 cases of convulsions so inaccurately reported, we have but 37 cases of eclampsia in the field of practice reported. Upon the first basis we have 52 cases of convulsions in 7,759 labors, or 1 to 149 and a fraction; upon the second, 37 cases of convulsions to 6,559 labors, or 1 to 177 and a fraction. Again, if we take simply the practice of the physicians reporting cases of convulsions occurring in their own practice, we have, leaving out the 1,200 cases referred to above, 37 cases of eclampsia in 5,614 labors, or 1 in about 157; including the 1,200 cases, we have 52 cases of convulsions in 6,814 labors, or about 1 in 131, according to these statistics.

I think it safe to say that convulsions occur about once in 150 to 200 cases of labor in this section of Ohio. If this be true, the occurrence of puerperal eclampsia here is much more frequent than as stated by the leading authorities. Of

the total 65 cases of eclampsia, 41 were primiparæ, 24 multiparæ, and 6 in twin labor. This is an unusually large proportion of multiparæ. If the 1,200 cases of labor referred to are left out, we have 50 cases of eclampsia, of which 34 were primiparous, 16 multiparous, 4 in twin labors. Of the twin cases 3 were multiparæ, which reduces the multiparæ with single births to 13, which still exceeds the proportion stated, that of 2 in 10. Two occurred in the unmarried state, and 2 had been subjected to severe mental anxiety, making 4 cases in which mental worry might have been a factor in causing the trouble. The urine was examined in only 12 cases—in 1 with a negative result, in 11 it was albuminous—and in several other cases dropsy is reported.

It seems that albumin was nearly always found when examination was made; but as the urine was nearly always tested after the fits occurred, and as it is well known that the fits themselves sometimes cause a temporary albuminuria, this evidence is perhaps negative.

The vertex presented in 42 of the 50 cases accurately reported, 1 shoulder presentation, and 7 not stated. Forty-six occurred at full time or nearly so, 2 at the seventh month, and 2 at the eighth month. Three are reported as beginning before labor, 27 during, and 20 after labor.

I do not think these figures are very reliable, so far as they relate to the number of convulsions occurring before and during labor; that is, I question whether the distinction between before and during labor is accurately drawn, but cannot question the large number reported as occurring after labor. Taking the grand total of 65 cases of convulsions, the recoveries are 56 and the deaths 9. If we leave out the 15 cases so uncertainly reported, as I think we should, we have 41 recoveries and 9 deaths, which makes the proportion of fatal cases to the whole number as 1 in 4 $\frac{1}{3}$, which certainly is a very good showing. Taking the 50 cases more accurately reported, the 41 that got well show that 29 were primiparæ, 12 multiparæ. All of the cases occurring in twin labor recovered.

The ages of the mothers varied from 17 to 40; most of them between 19 and 25 or 30. Urine examined in 11; albumin found in 10; 1 reported dropsical; 38 were at full time, 1 at seventh month, and 2 at eighth month. In 3, convulsions

came on before, 21 during, and 17 after labor, one as late as twenty days. Children reported lost, 8; saved, 9; others not reported. Three had only one convulsion; most had from three to ten, and one had thirty.

Fatal Cases.—The whole number of cases of convulsions in the practice of the physicians reporting fatal cases was 33, 9 being fatal. In every instance where the physician reported no fatal case he had not met with over 3 cases, with one exception, the physician reporting the 15 cases in 1,200 labors, where all are reported as recovering. One physician reported 1 fatal case in 8; another, 1 in 6; another, 2 in 5; another, 1 in 3—the ages of the mothers varying from 19 for the youngest to 43 for the oldest, most of them being from 20 to 25. One case had only one convulsion, which lasted at least thirty minutes; most of them had many convulsions, and 1 had sixty-three. Eight cases occurred at full time and 1 at seven months; 2 occurred before labor, 4 during, and 3 after. Two children were lost and 5 saved; others not stated. The time of death: 2 in twenty-four hours after delivery, 1 in three days from first seizure, 1 in sixteen hours after commencement of labor and eight hours after delivery, 1 in two hours after delivery, 1 in a day or two. Causes of death stated: 1 was uremia, 1 albuminuria, 1 coma, 1 apoplexy, and 1 fever.

Of the fatal cases, one-third, or 3, occurred after labor. Of those that recovered we have 17 after to 24 before and during labor. We then have 30 cases before and during labor, of which 6 proved fatal, or 1 in 5; and 20 cases after labor, with 3 deaths, or 1 in $6\frac{2}{3}$. The large number of fatal cases occurring after is remarkable, as it is generally stated that comparatively few of such cases die.

Leishman is the only writer, as far as my knowledge extends, who suggests a different opinion. He says that it is a matter of dispute whether the eclampsia which develops itself for the first time after delivery is or is not more dangerous than the other forms. "Theoretically, one would think so, seeing that uterine excitation and pressure on the renal vein being no longer in operation, the occurrence, under such circumstances, might be held as indicating a more grave constitutional affection." But he adds that Pajot, Blot, and others

have strongly deprecated this assumption, and have stated as the result of their experience that in these cases the issue is on the whole more satisfactory." And this is the usual view. My statistics show $33\frac{1}{3}$ per cent fatal in cases occurring before labor, $18\frac{1}{2}$ per cent during, and 15 per cent after labor, taking only the fifty accurately reported cases into consideration.

CASES RECOVERING.

Reported by	$\frac{2}{N}$	Treatment of Convulsions.	Man'g't of Labor.
Dr. Dunlap...	5	All by bromide of potassium and chloral	Two nat. labor, two by turning, one forceps.
Dr. Matthews.	1	By veratrum in small and frequent doses until vomiting was produced.	Natural labor.
Dr. Vance.....	2	First, twin labor, by veratrum; fifteen drops every twenty minutes until half an ounce was given. Second, veratrum two doses, twenty drops each, one-half hour apart.	First, nat. labor. Second, forceps.
Dr. H. M. Brown.	7	All veratrum; seventy to one hundred drops every thirty to forty minutes.	One forceps, six convulsions after natural labor.
Dr. Whistler..	3	By veratrum until effect produced. Dose not stated.	After labor.
Dr. Patton ...	2	First, by bleeding freely twice. Second, chloral, bromide of potassium, veratrum, morphine.	Both natural. First, convulsions before, and second, after labor.
Dr. G. M. Tel-fair.....	4	By veratrum, from five to ten drops until effect produced. Bromide, chloroform, and morphine.	All natural labors, one after.
Dr. Ireland...	2	By chloral, bromide of potassium, and chloroform.	One turning, one forceps.
Dr. L. M. Green.	2	First, eight months, by hydrate of chloral and bromide of potassium per rectum. Calomel and jalap with bitart. of potass. Milk diet. Second, by bromide and chloral, fifteen grains each, and chloroform.	First by turning on account of shoulder presentation. Second, natural.
Dr. T. C. Quinn.	4	First, by chloral and bromide, with calomel ten grains, five-drop doses of veratrum, chloroform. Second, by chloral and bromide, three-drop doses of veratrum causing sickness, one or two drops given hypodermically; bleeding morphine hypodermically. Third, chloral and bromide, fifteen grains each, veratrum ten \mathfrak{m} hypodermically, morphine ten \mathfrak{m} in same manner; bromide of potassium, chloroform.	First, second, and third, after natural labor; fourth, by turning.
Dr. F. M. Granger.	3	Two by bromide of potassium and morphine; ice to the head. One by cold to the head, with veratrum fifteen \mathfrak{m} , nine doses, given fifteen minutes apart.	One forceps, two natural labors.

Reported by	No.	Treatment of Convulsions.	Man'g't of Labor.
Dr. McBride..	4	Two coming on after labor. Removing clots and bleeding, one to the extent of one quart. Bromide in large doses in all.	One turning, three natural labors, two cases after delivery.
Dr. R. A. Brown	1	Bromide and chloral, fifteen grains each, three doses; morphine hypodermically one-sixth grain; veratrum three doses, fifteen drops, thirty drops, sixty drops, thirty minutes apart.	After natural labor.

FATAL CASES.

Reported by	No.	Treatment of Convulsions.	Man'g't of Labor.
Dr. Dunlap...	1	Small doses veratrum, six to eight drops every two hours.	Natural labor.
Dr. H. M. Brown.	1	Morphine hypodermically, bromide, chloral, gelsemium, bleeding, cathartie.	Convulsions after natural labor.
Dr. L. M. Green.	1	Chloral, bromide of potassium, morphine hypodermically, veratrum in small doses, chloroform.	Used battery to increase force of pains after case seemed hopeless, to secure birth of child.
Dr. H. Whistler	1	By chloroform and morphine.....	After nat. labor.
Dr. G. M. Telfair.....	2	By bleeding, chloroform, and bromide of potassium.	Natural labor; one after.
Dr. T. C. Quinn.	2	First, by five-drop doses veratrum, fifteen of gelsemium, calomel. Second, by bromide, chloral, and chloroform.	First forceps, second induced labor.

We find from an examination of these tables that the remedies used in the treatment of the convulsions embrace veratrum, morphine, chloral hydrate, bromide of potassium, chloroform, and bleeding as the agents most depended upon. Now, taking the last first, we find that 7 patients were bled, 4 recovering and 3 dying. Of the first, bleeding was the only remedy used in 1; in the other 3 it was associated with bromide of potassium in large doses in 1, and with bromide, chloral, veratrum, and morphine in the others. In 2 convulsions came on after labor. Of the 3 that died, bleeding was used with chloroform and bromide in 2, and chloral, bromide, morphine, and gelsemium in the other. In 1 convulsions came on after labor. In 1 of the cases that recovered the bleeding had no apparent effect upon the patient except to weaken her; convulsions finally controlled by morphine. In the

others the recovery is attributed to the bleeding. Of those that died after being bled, the physician reporting 2 of the cases thinks the result was largely due to the blood-letting.

Chloroform we find used in some 15 cases, in each associated with other remedies, and in no case can the result be assigned to it alone. It seems to have been useful to some extent in all. It is surprising it was not more generally employed. Morphine was used in 14, never alone, but in 2 cases with only the addition of chloroform. Of the cases in which it was employed, 10 recovered and 4 died. Among the latter, 2 were treated by morphine and chloroform without other remedies. In 1 of the other 2 cases, bleeding, chloral, bromide, gelsemium, and cathartics were used; in the other, chloral, bromide, and veratrum; but in this last case, as I saw the patient myself in convulsions, I can safely say that I do not think anything could have saved the woman. She had but one convulsion, lasting half an hour. She never regained consciousness, and died, as I believe, from brain lesion caused by the convulsion.

Of the 10 cases that recovered where morphine had been given, it was always associated with other remedies, and in only 3 or 4 is the recovery attributed especially to the morphine. In 2 of these it was given with bromide, and in the others with veratrum, bromide, chloral, and bleeding, the convulsions being controlled by the morphine. In all it was considered as largely aiding the recovery, save one where there was no effect until veratrum was given in large doses. Bromide and chloral were frequently associated in the treatment, 18 being treated with these remedies, either alone or in connection with other treatment; 15 of these recovered and 3 proved fatal. Of the first we find 5 recoveries with no other treatment, the convulsions ante-partum, and the labor terminated by forceps in 1, by turning in 2, and 2 by nature. In 4 other cases the recovery is attributed to these remedies with chloroform, in 1 aided by eliminating remedies, convulsions ante-partum; labor natural in 1, forceps in 1, and turning in 2. In the other instances they were given with morphine and veratrum, and are assigned only a secondary place so far as the result is concerned, as they failed to control the convulsions. In the 3 fatal cases in which they were given,

other treatment was also used, 1 with chloroform only, 1 morphine and veratrum in small doses, and 1 with bleeding, morphine, and gelsemium; in 1 the convulsion was post-partum, in 1 labor was induced at seventh month, and the other was the apoplectic case mentioned.

There are 12 cases besides these in which bromide, but not chloral, was given. The bromide was associated with other remedies, except in two instances in which it was the only remedy used, and both recovered. In 4 cases it was associated with bleeding, either alone or with the addition of chloroform. Of these, 2 died and 2 recovered. In the other 6 the bromide was given with morphine and veratrum. Bromide was given more generally than any other one remedy, and, whilst it rarely has the credit of cure given to it alone, it seems nearly always to have been considered a useful help.

We now come to the veratrum, and find this remedy administered in 26 cases, of which 23 recovered and 3 proved fatal. Of the latter, we find 1 treated by veratrum alone, but only from six to eight drops given every two hours. In one other fatal case it was given with morphine, chloral, bromide, and chloroform, and given only in small doses. The other fatal case was the apoplectic case spoken of. Only a few small doses were given, and, as the symptoms did not seem to indicate it, it was abandoned. Of the cases taking veratrum and recovering, we have 14 reported in which it was the only remedy used, except cold to the head. It is true that among this number the convulsions were post-partum in 6, but many of these the attending physician noted as very severe; among these were 2 forceps cases.

In the 9 remaining cases which recovered, the veratrum was associated with chloral, bromide, morphine, chloroform, and bleeding—several or all of these remedies. In 2 of these it controlled the convulsions after all else had failed, and in 4 others the attending physician attributed the recovery principally to the veratrum, and in all but 1 it was acknowledged very beneficial. It will be noticed that many of these cases took large doses of the drug, while in the fatal cases the dose was small.

Conclusions.—Puerperal eclampsia is of much more frequent occurrence, at least in some localities, than is generally

supposed. The mortality in cases occurring first after labor is greater than usually stated by the leading writers. In every case of pregnancy, especially in primiparæ and when twin pregnancy is suspected, the urine should be frequently examined, and when traces of albumin are found the patient should be put on milk diet with diuretics and vapor baths. If convulsions come on in spite of treatment, labor should be induced by vaginal douche and Barnes' dilators.

The Treatment of Convulsions.—If the patient is at all plethoric, first give veratrum in decided doses until its effects are secured; then, if required, follow with morphine. Both of these remedies should probably be given hypodermically. If the patient is anemic it is best to commence with morphine. In the use of these two remedies, if given by the mouth and the case is at all severe, large doses will probably be required: of veratrum, from fifteen to sixty drops, frequently repeated in many cases; of morphine, from one-half to two grains. It is therefore best to give both, especially the latter, by the hypodermic method. Hypodermically, from one-sixth to one-half grain of morphine, of veratrum from two to five drops, are judicious doses. If these remedies fail, then give chloral with bromide of potassium per rectum, 3 ss. to ʒ i. doses of each. In some cases postural treatment will prove useful. Chloroform is useful in almost all cases of puerperal eclampsia, and should be given during the fits and when any obstetric operation is attempted.

To endeavor to bring about as early delivery as the safety of the mother will allow should be the rule in all cases of eclampsia. Forceps delivery is preferable when it can be safely accomplished. Turning, however, is good practice in some cases. Bleeding is rarely required, as veratrum will nearly always accomplish more safely all we can expect from blood-letting. Bleeding is not recommended by any authority in convulsions after labor; surely, then, it should not be used before labor, if it be possible to avoid it. In a few cases, however, in emergency, bleeding will save life; but, with the remedies now at our disposal, they ought to be few and far between. You never know how much blood a woman in labor is going to lose from uterine hemorrhage, but you do know this: if from any cause the loss is great, it subjects her

to increased peril from septic absorption; therefore never bleed unless clearly indicated. I have no doubt that, in the past, bleeding was often required in puerperal convulsions, because there was no better remedy; and I have no doubt that in the future it will rarely be necessary, because there is a better agent at command—*veratrum*. Bleeding is at best but a surgical procedure, and is based upon the principle that if thy eye offend thee, pluck it out and cast it from thee; it is better that the eye be lost than that the whole body should perish. And this is true; but it is still better to save both if possible. Medicine occupies a higher plane than surgery, and the highest honor of the surgeon is not his skill in operating, but his skill in avoiding the necessity of mutilating the body.

Lusk quotes Dr. Kenyon in regard to the action of *veratrum* as follows: "The drug is quickly absorbed and enters the circulation rapidly. It enters the *vasa vasorum*, and through them impairs the sensibility of the vaso-motor nerves. The blood vessels thus lose their tenacity and power of contraction"—"All good argument," says Lusk, "for its use in convulsions, if its safety can be established." Its safety, I think, has been certainly established, at least if administered by the mouth, as it always provokes vomiting when pushed to full doses. The hypodermic use of *veratrum* has not been so thoroughly tested. My suggestion that probably it is best given in eclampsia in this manner may be wrong, although I believe it will prove true in the hands of the careful, judicious physician, as it is a more accurate and scientific method of administration. Morphine and whiskey counteract the excessive action of *veratrum* very certainly and promptly. Morphine, if given in eclampsia, should always be administered hypodermically. It is a dangerous and uncertain remedy by the mouth, on account of its slowness of absorption.

While speaking so highly of the results of *veratrum* in eclampsia, I would not be understood as indorsing it as a specific. While in some cases I believe it will prove the only remedy required, in many others both *veratrum* and morphine will be needed, and in some morphine alone or with chloral and bromide will be all that is desired. I would insist, however, that with *veratrum* and morphine, assisted in some

instances by chloral and bromide of potassium, nearly all cases of puerperal eclampsia that are susceptible of cure can be relieved, and that bleeding should be restricted to the narrowest limits or banished entirely as a remedy in this disease.

IMPERFORATE HYMEN, WITH EXTRA-UTERINE ABDOMINAL TUMOR.

BY

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On June 28th, 1889, Miss K., age 18, native of South Carolina, was brought to me from the interior of the State by her attending physician and placed under my care. She was of small stature, but well developed and of healthy appearance; made no complaint of sickness or suffering, but had an abdomen as large as at the seventh month of utero-gestation. She had never menstruated, nor did her parents remember to have heard her complain of any symptoms indicative of menstrual effort. More than a year ago the attention of her physician had been called to a slight prominence in the lower part of the abdomen towards the left groin: this was soft and elastic, but not painful. Painting with iodine was advised and the case dismissed. The girl went to boarding school, was away from home for a year. Returning home only two weeks since, the attention of the family physician was again sought. Now was revealed the fact that there had never been menstruation, and the enlarged abdomen was very conspicuous. Further examination disclosed the existence of an imperforate hymen. I found the abdominal tumor central and symmetrical, tense, elastic, painless. The orifice of the vagina was closed by a very thick, resisting membrane. Pressure upon the abdomen caused this membrane to bulge or protrude to a slight extent between the labia. Bimanual and alternate pressure upon abdomen and hymen yielded marked fluctuation. The most natural infer-

ence was that I had to deal with a case of imperforate hymen with retained menstrual fluid; but the tumor was softer, larger, and more fluctuating than could be conceived of under such a pathological condition.

June 29th, operation under chloroform. A finger in the rectum and catheter in the bladder showed the vagina to be occupied and distended with fluid. The hymen was punctured with a narrow bistoury at its lower margin. There at once escaped, in a forcible jet, a tawny-yellowish, serous liquid. This did not resemble pus either in color or consistence, nor to the eye did it convey the impression of having any admixture of blood. The opening through the hymen was enlarged by a free crucial incision and by tearing the tough membrane with the fingers. The entire fluid contents of the tumor were now evacuated to the amount of nearly two gallons. No blood, no blood clots, no tarry black menstrual fluid escaped; the whole of the liquid was of the nature above described.

The exploration of the cavity, now made by the fingers and a long forceps, after the introduction of a Sims' speculum, showed its immense extent and direction. The usual vaginal cul-de-sac was not to be felt. This had so disappeared or retreated that an elastic male catheter could barely reach the upper limits of the cavity. This was deepest towards the right side and posteriorly, but it also extended in front of the uterus across the median line of the abdomen. Thus was explained the central character of the abdominal swelling as originally observed. Ocular inspection showed the vaginal mucous membrane deprived of its epithelium in irregular patches and looking like an abscess cavity; this was more conspicuous upon the right half of the exposed surface. The uterus was empty, of about twice the normal size, soft, movable, easily thrust to either side or drawn downward to the vaginal outlet. The cervix was soft and elongated, the os large and patulous. The uterine cavity had evidently been to some extent distended with fluid, but whether this escaped into the vagina only at the time of my dividing the hymen I shall not attempt to decide.

After the fluid had all escaped from the adventitious sac and the tumor of the abdomen had disappeared, the entire

cavity was syringed out with a solution of the bichloride (1:3,000), and a rubber drainage tube of large calibre was pressed to its bottom. The tube was surrounded by strips of iodoform gauze carried well into the cavity, to act antiseptically and to assist drainage. No reaction followed the operation.

June 30th, the cavity was again syringed out with the bichloride solution and the iodoform gauze renewed. This course was pursued every day for a week. On the third day after the operation the temperature reached $99\frac{1}{2}^{\circ}$, but sank to normal the next day after the bowels had been moved. There were no other symptoms worthy of note.

July 8th, patient was permitted to return home with her attending physician, who undertook to continue treatment. I was kept duly informed of her continued progress and complete recovery. Menstruation has since been regular, and the pelvic organs all occupy their normal relations.

Remarks.—The interest of this case attaches:

1. To the retention of the menstrual secretion for many years, without attracting special attention or developing those symptoms which so commonly accompany the periodic menses.

2. To the peculiarity of the fluid that made up the fluctuating tumor. The distention of the vagina or uterus by menstrual blood is not uncommon, but this was not simply a case of hematocolpos or of hematometria. To the eye the fluid presented none of the appearances of retained menstrual secretion, which is so commonly seen as a dark-colored fluid of treacly consistence. It was more like the fluid of a chronic abscess, and yet differed considerably from this in appearance and character. Pathologically, however, the fluid must be associated with chronic pus formation; and yet it had no odor, although so long retained in proximity to the rectum. Under the microscope it exhibited the characteristic appearances of sero-pus with some broken-down blood cells.

3. To the absence, during the years of the formation and retention of the fluid, of all symptoms usually associated with pus development—no pain, no fever, no disturbance of nutrition or serious perversion of function.

4. To the size and location of the fluid tumor. The slow

accumulation of so large an amount of fluid, and its diffusion by a kind of dissection, so that it spread out in front of the uterus as well as laterally, gave the peculiar anomaly of an extra-uterine tumor as the result of retained menstrual secretion.

5. To the remarkable resistance of the hymen and vaginal walls, as shown in the retrograde dilatation of associated parts. The hymen can in no way be regarded as a mere fold of mucous membrane. In this case it certainly sustained the opinion of Budin that the structure is, "anatomically, a folding-in of the entire vaginal walls." In cases of retained menstrual blood from obstruction at the vaginal outlet, the vagina, according to Klob, rather than the uterus, yields and forms the sac. This view is not generally accepted; but assuredly in the present case, if regarded as one of retained menstrual secretion, the vagina must have dilated first, then the uterine cervix and uterine cavity. The vagina and hymen by their power of resistance sustained the weight of the immense quantity of fluid, which, by its slow increase, forced up the vaginal cul-de-sac, the peritoneum, and other tissues.

6. To the entire absence of untoward symptoms after the operation, and the perfect recovery of the patient.

There has been much discussion as to the treatment of retained menstrual fluid, based upon the supposition that the fluid always distends the uterus and may possibly have reached the tubes. There are still advocates both for the slow and the speedy evacuation of the fluid. Where the distention of the uterus can be clearly determined, a conservative practice may be the best to follow. That operation which is the least likely to be followed by serious reaction is the one to be preferred. If the vagina yields first, and is relatively the more distended, the speedy evacuation of the fluid may be safe. Modern antiseptic treatment has in some particulars changed the views of practice in these cases. It is capable of warding off at least one of the dangers to be encountered after such operations. The quickest operation, in a case like the one now under consideration, was assuredly the safest and the one calculated to bring the most speedy relief.

A STERNOPAGOUS MONSTER.

BY

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(With one woodcut.)

AT 2 o'clock on the afternoon of May 20th, 1890, I was called to visit Mrs. D. in her third confinement. In August, 1885, she gave birth to twins of large size, and in March, 1889, to a single child weighing twelve pounds. Both labors were normal. On this occasion the abdomen was unusually large, presented a uniform appearance, was sensitive to the touch and more or less edematous, thus preventing manipulations necessary to establish a correct differential diagnosis of the uterine contents. The vagina, large, soft, and pliable, contained a bag of waters completely filling up the passage, the os being fully dilated. While attempting to reach a presenting part, the membranes gave way, allowing a copious flow of liquor amnii. Realizing that I had a case of hydramnion of at least ordinary extent, I endeavored to arrest the flow of fluid and prevent the chance of syncope by introducing the hand into the vagina. This procedure accomplished the end in view, and enabled me to collect the major part of that retained, which amounted to a little more than two quarts, and, with what escaped previously and that lost during collection, would make up a total of about a gallon. A head now presented at the inferior strait—the occiput, and to the right. The abdomen now showed an irregularity and contour that led me to infer the presence of a plural pregnancy. The pains became regular and strong, but without any perceptible advancement of the presentation. After an hour I applied the forceps, bringing the head to the perineum in a few seconds. Progress was again arrested, although the contractions continued regular and firm. A left arm was brought down. This did not facilitate matters, except in bringing the head clear of the vulva—a

condition not desirable at this stage, as the subsequent history of the case proved. On the right and immediately above the symphysis another head could be distinctly defined. Traction on the one at the vulva produced a decided movement of the other, which proved to my mind conclusively that instead of two distinct fetuses I had a monstrosity with at least two heads. Interference now ceased for a time, the accoucheur giving his attention to the direction of the movements of the intra-uterine head through the abdominal walls during uterine contractions. These continued at regular intervals, and in half an hour the head assumed a position more to the left. Concluding that was the proper direction for it to take, I gently assisted nature, and in less than an hour felt it disappear in the floor of the pelvis. At the same time the vulvar head, performing a rotary movement to the right, presented a face upward, the woman lying on her back, and a few more pains completed the delivery of this monstrosity, of the sternopage variety, dead. Its structure followed exactly the law that "when two or more individuals are united in composition of a monster, double, or more than double, the union takes place between homologous surfaces of the bodies." The bodies were united from the upper part of the sternum to the umbilicus, with a cord common to both. There were four perfectly developed arms and hands, and four legs and feet. Both were males, also bearing out the law that in the fusion of bodies both are always of the same sex. It weighed eight pounds.

The most interesting, important, and practical consideration to our profession in these cases is the method of delivery. Of the cases of monstrosities by fusion occasionally reported, this idea seems to be overlooked except in a very few instances. When a diagnosis, even an approaching one, is made, the physician feels strong in his ability to conduct the case to a happy termination, if similar cases are familiar to him and their conduct fresh in his mind. The writer will frankly admit that he became somewhat worried at the discovery of this production while it was intra-uterine, and for a time was considerably disturbed at the probable prognosis, but an observation of the workings of nature in the case enabled him materially to aid in its advancement. The left

head was the first brought down, followed by the left arm as described, the right being beyond the symphysis and impossible to extract without endangering its safety; the right head was placed on its spinal column, the chin resting firmly on the pubic arch and to the right. During a contraction its outlines could be distinctly seen and felt, with a slight motion to the left noticeable. During the intervals both hands were gently but firmly applied to the head and a movement to the



left encouraged. By persistent action in this way it finally dropped from the touch into the extremely roomy pelvis, and was delivered, the shoulders and body offering no resistance. The woman made a complete and happy recovery.

The sternopagus variety of monstrosities—where two individuals are fused, face to face, from the umbilicus to the upper part of the thorax—is not common, although at one time it was not considered rare. The accompanying cut of this case gives a perfect representation of this form. Each sternum

is divided in the mid-line, and each half with its ribs opens outwardly. There is one thoracic cavity, two vertebral columns, two sterno-costal walls, each wall being formed by half of the sternum and ribs of one fetus and half of the other. Recorded dissections give one pericardial sac, containing two hearts united or close together. The diaphragms are joined, constituting one septum, with two halves symmetrical. The lungs are four in number and but little altered. The large vessels of the heart are anomalous, which no doubt explains in part why they die shortly after birth.

Consulting the literature of the subject at my disposal, I cannot find an account of another monomphalic sternopage born in this country. Dr. O. N. Huff, of Chicago, reports in the September number of the *JOURNAL* for 1889 a very interesting case of an ischiopage, which, as far as I know, is the only one of that kind reported born in this country. The Old World seems to have a monopoly in this business. The sternopage has several others analogous to it, among which may be mentioned the xiphopage, where the union of the bodies is above the umbilicus, that is, begins there and extends above to include a portion of the thorax; the famous Siamese Twins are classified under this head. The xiphodynus, where the fusion involves the lower part of the thoracic walls; the vertebral columns in the majority of cases are separate, with a rudimentary pelvis in between; the coxal bones are widely apart posteriorly, between which are the spinal columns and the sacrum; the same mechanism exists in the thoraces of this variety as in the case here reported—Rita Christina was a striking example, upon whom Serres performed an autopsy. Another is the ectopage, which is marked by the inequality of the two costosternal walls of the double thorax, one well developed, the other not. The vertebral columns are very near together. There are four arms and four legs, one arm and leg being imperfectly developed and on the atrophied side of the thorax. Wood's "*Cyclopedia of Obstetrics and Gynecology*" contains a case which is described as extremely rare, and all known cases have died immediately after birth.

Many theories have been advanced in explanation of these undesirable fetations. Dunglison, with his clever definition of a monster, "any organized being, having an extraordinary

vice of conformation or a preternatural perversion of every part, or of certain parts only," declares that of the numerous hypotheses entertained on the origin or cause of monsters, three only are worthy of consideration—1. The influence of the maternal imagination on the fetus in utero; 2. Accidental changes experienced by the fetus at some period of its existence; and 3. A primitive defect in the germs—and adds that the second seems to be the only philosophical one.

THE IMPORTANCE OF A CORRECT CLINICAL HISTORY IN OPERATIVE GYNECOLOGICAL CASES.

BY

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SOME months since the writer prepared a paper for the Nashville Session of the American Medical Association, entitled "Psychical Results of Abdominal Operations." The result of the investigation clearly proved that in most cases where insanity followed such surgery there was a history of mental aberration pre-existing, and that heredity figured as an etiological factor.

The following case is noted, to show how easily one may overlook the history of such symptoms:

Miss —, age 35, single, was sent to me in May for Battley's operation. She had been an invalid for ten years, having hysteria from uterine and ovarian causes. She was treated for retro-displacement and fixation of the uterus and menorrhagia in 1889, and had her uterus dilated and curetted.

The treatment instituted not having been found beneficial, but, in fact, rather harmful, it was decided, after careful examination and consultation, to open the abdomen and ascertain the cause of the trouble.

The left ovary was found very small (cirrhotic?); the right, cystic to such an extent that it looked like a small cluster of grapes; firm adhesions on the right side, the separation of which permitted easy motion of the uterus, as was confirmed by

vaginal examination at the time ; appendages on both sides removed. The patient had no sign of peritonitis, so far as pain, distention, or other interference with the bowels was concerned. But there were other interesting phenomena to mention. On the third day temperature 102° , pulse 130 to 140 ; the heart plainly to be heard across the room ; the face not anxious ; no sign of peritonitis, but certain peculiar mental symptoms began to show themselves. She was deluded in regard to many things, but not violent. Her nurse could do nothing for her without giving offence, and a new one was selected. This condition continued for three days, when she was given chloral-amid and sulfonal, with good results. She also took bromide of potassium and tincture of digitalis, which had a beneficial effect in controlling the violent action of the heart. The patient was hungry all the time, and had a natural movement of the bowels each day during the two weeks in bed. She sat up on the tenth day, looked well, and had full diet. The history given by the patient herself afforded no suggestion of insanity, nor did her physician, a man of more than average ability, allude to a history of mental disease ; yet upon close inquiry it appears that her mind has been on more than one occasion far below the standard of health. I attribute her rapid pulse and increased temperature to her mental condition entirely.

It is quite possible that this case would be considered one of psychosis due to operation, by those who have reported cases. There can be no reasonable doubt of the operation having been the exciting cause of this attack, but it is equally true that any shock might temporarily unbalance a nervous and mental equipoise which, by reason of previous attacks, had been greatly disturbed.

The patient has entirely recovered, and appears well in every way, save the slightest tendency to insomnia.

In conclusion I would urge upon the profession the great importance of careful inquiry upon this point ; and to those who are influenced by the statistics of Dr. Keith, I would say that Mr. Tait (with all his immense experience) has had only two cases of insanity as a result of operative work. One of these was shown to have had former symptoms, and the other was apparently the result of the anesthesia.

TRANSACTIONS OF THE NEW YORK
OBSTETRICAL SOCIETY.

Stated Meeting, May 20th, 1890.

The President, DR. J. E. JANVRIK, in the Chair.

DR. FLORIAN KREIG showed a

SMALL OVUM

which he had taken from a woman who was suffering from a double ovarian cyst. The patient had last menstruated on the 19th of December, 1888. The speaker had seen her on the 5th of January of 1889, at which time she was suffering from profuse hemorrhage and was in pain. An examination was made per vaginam, and after cleaning out some clots the ovum was removed, which he now presented as a very perfect specimen, the villi and other early embryonic structures being readily demonstrable.

DR. KREIG then exhibited

A LARGE FIBROMATOUS UTERUS WITH THE TUBES AND OVARIES.

which he had removed from a patient 39 years of age. The woman had noticed a small lump in the left inguinal region, and this had existed for seven or eight years without giving trouble, but during the last six months it had increased so rapidly in size as to prevent her earning a living, besides giving very great pain until her health began to fail. Menstruation had always been good, but her condition at length had become so deplorable that she was forced to seek relief. The indications were such as to render prompt surgical interference necessary. The speaker had opened the abdomen from a point one inch below the umbilicus down to the symphysis. This had enabled him to roll out the tumor, tubes, and ovaries. He had commenced by tying off the upper portion of the broad ligament and enucleating a large portion of the tumor, thus reaching the lower pelvis. His idea had been to try and form a pedicle, ligate it, cut it off, and remove the stump per vaginam. However, when he had enucleated this portion from the right side he was able to reach the cervix, so he had opened the vagina and dug out the uterus, cervix, and everything else. There had been very little hemorrhage.

Without washing out the abdominal cavity he had packed the lower part of the wound with iodoform gauze, allowing this to project through the vagina, as in a vaginal hysterectomy, and had then closed the abdominal wound. The patient's bowels were caused to move on the second day. There had been no rise of temperature to speak of. She had had no vomiting. There was primary union of the abdominal wound, and altogether an uninterrupted recovery.

DR. KRUG also showed two specimens of

SUBMUCOUS FIBROIDS, AND A CYST OF THE VAGINA

which he had recently removed.

DR. W. M. POLK, referring to the above method of digging the uterus out, said there was no question but that most of the resistance came from the peritoneal attachments to the surrounding structures. If these were separated it was surprising to what extent the vagina could be drawn up. As to the advantage of making complete extirpation, it was advisable where it could be done within reasonable limits, but where the cervix was deep down the difficulties were much greater and the procedure thereby very much prolonged.

DR. A. H. BUCKMASTER exhibited a specimen of

SUBMUCOUS FIBROID

which he had removed from a woman who had been treated for stone in the bladder and various other conditions. This patient had died from Bright's disease. While there was nothing remarkable about the tumor itself, the case was of interest because it went to show how easily the growth could have been removed by operative means if a correct diagnosis had been made.

THE PRESIDENT asked whether it was a mere coincidence that there existed the presence of submucous fibroids together with the Bright's disease.

DR. BUCKMASTER, in reply, said that was a question he wanted to bring out. He did not believe the diseased kidneys in this case were the result of pressure, as the ureters were in very good condition.

DR. R. A. MURRAY said that during the last four months he had seen three cases of submucous fibroids commencing with intra-uterine pressure, and in which kidney trouble had developed with clinical symptoms of Bright's disease. There had been suppuration from the tumors, and he had supposed, as there had existed no involvement of the bladder, that the kidney complication was the result of the prolonged suppuration. He had also seen two patients suffering from this class of fibroids, whom he had put on Hildebrand's treatment by

ergot for the term of a year and a half and a year and a quarter respectively. Sloughing of the tumors had taken place in both cases, and the patients, having survived this process, were now both entirely cured.

DR. GEORGE B. FOWLER read a paper on

A METHOD OF ARTIFICIAL INFANT FEEDING.

of which the following is an abstract :

He discussed the method by which casein is so modified that it will never form a clot again— this is by digesting it with pancreatin powders. It is an excellent method, but the trouble is that you must have fresh powders, otherwise the process will not be perfect, and you are liable to introduce poisonous constituents into the stomach of the child. The old method of mixing with cow's milk a certain proportion of some cereal is one of the best. Of all the cereals I prefer two— one for use in diarrhea, and the other in constipation; for the former condition I make use of rice, and for the latter a preparation of wheat and baked flour. I put enough rice in hot water to make, on cooling, a thick paste. The proportions are four tablespoonfuls of rice to three pints of water. This is allowed to boil half an hour, and then to simmer for a whole day, during which time water is added at intervals to compensate for evaporation. By this means the rice is thoroughly hydrated, and the mixture is allowed to stand until it cools and solidifies. For a child three months old, two tablespoonfuls of this paste may be stirred into its milk. If there is diarrhea and vomiting, this seems to control the condition and restore to a normal state of things better than anything I have used. Where there is constipation, I use farina, treated in the same manner and used in the same proportions. If we put some pure milk into a test tube and drop into this a little acetic acid, warm it, and allow it to stand a few seconds, we shall find that we get a coagulum. Now, if we put some rice or farina paste into another test tube with milk, and attempt to coagulate it, it will be found that a clot is scarcely formed, that it is soft and friable, that it runs about freely in the test tube, and after giving it a shake it is only possible to discover the casein in the most minute particles. The addition of starch, in the form of paste, gives us the granules in a state of perfect hydration, and they interpose themselves between the particles of casein and prevent the formation of a solid clot. A child of four months of age can digest starch. If any obstinate constipation supervenes, a little farina may be used for a day or two, and the bowels will open.

There are, however, conditions which require medicine— for instance, when there is vomiting, and so forth. Then I

believe in the use of calomel or corrosive sublimate. I do not know whether these act by reason of their antiseptic or germicidal properties, but I do know that they act as cathartics and that we get from them good results. But after medicines have done their work you will find that you must hit upon some food which can be assimilated.

As to the length of time between feeding in cases of diarrhea and vomiting, I almost starve the patients. Water they may have, as much as they will drink. Insisting upon a long interval between food has in my experience not infrequently turned the tide of events in favor of recovery.

My own practical experience with the food prepared as I have indicated has been so gratifying that I determined to make it the subject of these few remarks.

DR. H. D. CHAPIN said he had studied practically the subject of baby feeding in the babies' wards, and had come to the conclusion that infant foods were to be discarded. He believed in imitating, so far as possible, human milk in the preparation of foods for infants. It was necessary, he thought, to have still more accurate analyses of human milk. He had fixed on that of Meigs as practically the most correct. This author gave casein as present to the extent of one per cent, which was much less than that given by other analysts. In diluting milk for food on this one per cent basis he thought he got the best results. He had tried several methods of preparing his cereals, among them that of Soxhlet, which he had abandoned. He now used Arnold's Steam Cooker, which gave great satisfaction. Experiment had demonstrated to him the fact that in order to effect the sterilizing of milk it was necessary to subject it to heat for a much longer period than was usually supposed. By using the Arnold's apparatus and sterilizing the milk for an hour and a half he had found it possible to keep it for three or four weeks. Such sterilization should, however, be effected early, before the development of germs to such an extent that the process was rendered to a greater or less extent nugatory. As to the effect of sterilization *per se* upon the milk ingredients he was not prepared to say; still the idea was to get the cow's milk as nearly as possible like that from the breast. Of course, the latter was not subject to high temperature, and it was a question whether such heating produced any difference in the cow's milk. He had made experiments with various acids, such as acetic, dilute sulphuric, lactic, artificial gastric juice, and various other reagents, adding two cubic centimetres of the acid to ten of the milk, and then observing the clot. A series of such experiments showed that the clot in sterilized milk was smaller than in plain milk. He had no doubt that the sterilization of milk, in addition to destroying germs, favorably influenced its digestion. But even

the casein in sterilized milk was not so easy of digestion as the clot of human milk, and something had to be done in the way of artificial preparation. He was in the habit of using barley; this he put into a bag, heating it in a double boiler. This process changed the starch to dextrin. He used this for infants from the time of their birth, because he considered that there was an ability to digest a small quantity of starch from the first. He found most of the babies did best when fed on food compounded in the following proportions: One-third of sterilized milk, one-third lime water, and one-third of a gruel of dried barley, to which were added some cream and sugar of milk. He could give this to infants not over two days old. In some cases of diarrhea no milk food would be tolerated in any form. In such it was better to stop it entirely for forty-eight hours and put the patient on beef blood and water, or egg, or barley water. Many cases of summer diarrhea would be far more successfully treated if the milk was stopped from the first and a substitute exhibited. He was not a believer in the use of bichloride or any antiseptic in these cases, but considered bismuth, by its soothing local action, was to be preferred. The best way to deal with these troublesome diarrheas was to be very careful about the food, and follow up such care by the use of bismuth and free stimulation.

DR. I. H. HANCE thought that great reliance was to be placed on the dietetic treatment of these diarrhea patients; it was essential, however, to first clean out the alimentary canal, for which purpose castor oil and opium were efficient. The use of artificial infant foods of any kind had been, in his experience, unsatisfactory. He now used barley water and diluted milk and lime water. In the most severe forms of the disease it was necessary to remove all milk for a time. He advocated the use of calomel in small doses, together with a standard diarrhea mixture composed largely of bismuth, and he found the two together beneficial. He had noticed at autopsies upon children after these had been administered just before death, three to five grains of bismuth every three hours, that the alimentary canal was coated with it over the greater portion of its entire length, and he believed that it had a soothing effect upon the inflamed mucous membrane of the canal. During his time of service at the hospital the antiseptic method of treatment had come into vogue, and he did not see that any great result had been achieved. Then had come the sterilization of milk. This had given him most excellent results. He felt that he should always rely more upon careful dietetic treatment than upon drugs.

DR. J. H. FRITSCHT said that previous to the use of the sterilization methods he had employed artificial foods very extensively. Since adopting the Arnold Cooker he had in nearly

every instance been satisfied with the process. He recollected one case in which the child was given up to die, the diagnosis being marasmus, in which the exhibition of sterilized milk for two weeks had effected a cure. Milk should be withheld for a specified time. The white of egg and water should be given, and when this was assimilated the sterilized milk might be commenced. With the dietetic treatment he followed out the method of stomach and intestinal irrigation. He thought Dr. Seibert's plan of feeding in proportion to the child's weight did very well for healthy children, but was not to be thought of for sick ones. The speaker had discarded the use of salicylate of bismuth as injurious and likely to bring about rupture of the gastric blood vessels. Dietetic treatment should be the mainstay, and medicine only an adjunct, in most cases to be avoided.

DR. M. G. DADIRRIAN, after describing the process by which he prepared the fermented milk food Matzoon, said that though he had never specially advocated its use for children, still he should like it to have a trial in cases of infantile diarrhea and cholera infantum.

DR. R. A. MURRAY said that in discussing the subject so far they had somewhat lost sight of the fact that there existed such different kinds of diarrhea. He thought that what had been said was not applicable to ordinary infantile summer, fall, or winter diarrhea, due to many causes other than improper food. He made use of barley, which should be prepared fresh every day if it was to be of any value. Where there existed marked marasmus, the only thing to do was to peptonize the milk thoroughly, so as to absolutely digest it, giving stimulants and barley. He certainly did not discard drugs. It was a very difficult thing to control the management of a case of diarrhea in private practice.

DR. G. B. FOWLER stated that his paper was meant to be merely suggestive. The points had been gone into over and over again, and all he wanted was to offer the result of his experience. It was a mistake to add water to cow's milk and assume one was imitating that of the mother. By the addition of a paste of some cereal grain the milk was modified without losing any of its carbohydrates or hydrocarbons. This was more scientific than adding water. He would add that he relied very greatly on calomel and bismuth, with opium in form of Dover's powder.

HEMORRHAGE IN AN INFANT POSSIBLY RESULTING FROM THE USE OF ERGOT BY THE MOTHER.

DR. B. McE. EMMET narrated a case in which, after the exhibition of ergot for several days to a puerperal patient for

the control of recurrent post-partum hemorrhages, it was noticed that the child, when it commenced to take the breast, began to suffer from very pronounced hiccough and to show evidences of dislike to its food. On the third day spots of blood were noticed on the baby's dress and about its lips and face, while its stools were black and tarry. These symptoms continued during the administration of ergot to the mother, which was given in about five-minim doses every three hours, and ceased promptly upon withdrawal of the drug. Examination of the child had failed in the discovery of any point from which the bleeding might arise. The blood was not actually vomited, but seemed rather to quietly well up into the mouth.

DR. FOWLER thought that the condition had been one of melanemia.

In reply to a question, DR. EMMET said there was no marked discoloration of the urine.

CIRCUMSCRIBED ABDOMINAL ABSCESS.

DR. J. H. FRUITSNIGHT reported a case of circumscribed abdominal submural abscess, the initial symptoms of which had simulated those of puerperal systemic poisoning. The patient, five days after delivery, had had a rise of temperature, which prompt irrigation of the uterine cavity had failed to reduce. Pain in the right inguinal region was now pronounced, and a small, hard swelling developed. Dr. Wylie, who saw the case, had stated his belief that there was pus, and that the abscess was possibly connected with the peritoneal cavity. He had advised incision, which was accordingly made, allowing the escape of about six ounces of laudable pus. The pus cavity was found to be entirely circumscribed. The case was treated on general principles, and the patient had made a prompt recovery, all constitutional symptoms disappearing within six hours after opening the abscess. The speaker had mentioned the case to show that such conditions might arise with marked constitutional evidence of septic absorption. Examination of the external parts had revealed no evidence of laceration or abrasion, though the patient gave a history of having struck herself in this region against a corner of some furniture, and it was possible that from this injury the abscess had arisen.

DR. A. H. BUCKMASTER narrated a case of pelvic abscess in a woman six weeks after labor, which had opened spontaneously, filling a chamber half-full with pus. The speaker had recommended that the abscess should be opened through the vagina, if it was possible to get at it in that way; if it was not, the bladder was to be opened, the exact position of the rupture of the abscess be obtained, and drainage be established

through the vagina. The latter procedure had been adopted, and upon the bladder being opened a small rupture was found in the tissues at the junction of the uterus with the bladder. A probe was passed into the cavity, which was then dilated, and the operator had hooked his finger between the cervix and bladder, posterior to it, and, passing in a pair of sharp-pointed scissors, had made an opening, through which a drainage tube was introduced. The patient was about again in ten days, and now, six weeks after the operation, she was entirely well. It was the first time, so far as he knew, that the bladder had been opened for this purpose.

TRANSACTIONS OF THE GYNECOLOGICAL SOCIETY OF CHICAGO.

Regular Meeting, March 21st, 1890.

The President, JAMES H. ETHERIDGE, in the Chair.

EXHIBITION OF SPECIMEN.

DR. F. H. MARTIN.—Mr. President: The specimen that I wish to put on record is one of carcinoma of the cervix and a portion of the body of the uterus. The patient was 45 years of age, a Swede, married fourteen years, one child; had not yet reached the menopause. History: Had been flowing quite profusely for five years every two weeks. Assisted by Drs. Byford and Hoag, vaginal hysterectomy was performed. Clamp forceps were used to secure the broad ligaments after the base of the broad ligament on either side had been tied with strong silk. The forceps were removed at the end of seventy-eight hours; the ligatures came away about the eleventh day. The patient was discharged cured January 26th, one month after the operation. There was considerable pain in the right side, and I was a little afraid that infiltration might have taken place to some extent, and for that reason the forceps were placed as far away from the uterus as possible on that side. We removed the uterus with the tube and ovary of the right side.

DR. PARKES.—Why did you leave the forceps on so long as seventy-eight hours?

DR. MARTIN.—The case was very hemorrhagic, and I had been reading of late of a number of cases of hemorrhage following the use of forceps, and in these cases almost invariably

the forceps had been removed very early, within twelve or twenty-four hours. I really could see no reason why they should be removed earlier than seventy-eight hours, and for that reason I allowed them to remain, so as to avoid every chance of secondary bleeding.

DR. HENRY T. BYFORD.—I witnessed the operation, and would like to call your attention to one point, *i.e.*, the facility experienced in removing the uterus in this particular way, *viz.*, in tying the uterine artery and tissues around it first, and then using a pair of forceps above. There are thus no forceps in the way to interfere, and we can do the operation really quicker and better than if we used the forceps alone. I have operated in this way in five cases, all recovering. In a case in which I removed the forceps in twenty-four hours, I came near losing my patient from hemorrhage. Fortunately I was able to tampon so as to check the hemorrhage.

DR. D. T. NELSON.—The Society may remember that some months ago I exhibited an Outerbridge pessary for ante flexion, sterility, etc., and reported then that in my experience it would corrode and thus prove unsatisfactory and even dangerous. I have here three instruments. The one which has no tag upon it was worn one month, and you will see that it is corroded. The others were worn two months and three and one-half months; this latter one has one arm completely destroyed. They are iron wire plated with gold, but the gold plating is not sufficient to hold the iron underneath. They will corrode.

REPORT OF CLINICAL LAPARATOMIES DURING EIGHTEEN MONTHS AT RUSH MEDICAL COLLEGE.

DR. CHAS. T. PARKES.—I found considerable difficulty arranging in my mind the title of the remarks I wish to make to you to-night, and I do not know that the heading expresses exactly the idea. The method of operating is something of an innovation, in that the laparatomies are done in the public clinic room before several hundred students. The cases are presented under the supposition that their cure and results might be of interest to you, so I have gotten together the cases that have come under my control during the past two winter sessions, covering a period of about eighteen months, operated upon by me at the public clinic of Rush Medical College.

CASE I.—Miss Mamie M., Lincoln, Neb., age 22, American, school teacher, referred by Dr. Goings, family and previous history good, presented herself, to be placed under my care, with a large tumor of the abdomen. The tumor was first noticed by the patient, a year previous to her coming under my

charge, as a small lump in the lower portion of the abdomen on the right side. During the last four months it had increased rapidly until it filled the entire cavity. There was nothing peculiar or special about it in any way. It was diagnosed as a probable single large ovarian cyst, and operation advised, which was consented to and done before the class at Rush Medical College, November 3d, 1888. There was nothing found after abdominal section except a large ovarian cyst; no peculiarities, no adhesions. The patient went on to complete and perfect recovery by primary union without interference or rise of temperature. Discharged cured November 30th, 1888.

CASE II.—The next operation was done December 1st, 1888. Mrs. P. V., Elk Point, Dakota, age 42, married fifteen years; two children; American; housewife; family and previous history good; referred by Dr. J. G. Conley. The patient had been suffering for the past two years; the history was that of an ordinary ovarian cyst, nothing uncommon being determined by examination. Abdominal section and tapping of the cyst showed the contents to be of a chocolate color, containing sixteen pounds of fluid. There were a number of adhesions to many of the surrounding organs, but these were separated without difficulty and the tumor entirely removed. No well-defined pedicle could be found, the tumor being nourished apparently by its adhesions. In this case no unfavorable symptoms arose in the course of the recovery, and she was discharged cured three weeks after the operation.

CASE III.—The next operation was done March 26th, 1889. Mrs. Helen G., Morrison, Ill., age 46, American; housewife; family and previous history good; married twenty-two years; three children. Patient first noticed the appearance of the tumor six years ago, the first evidence of trouble being pain in the lower portion of the abdomen, and in a few months she discovered a small lump in the right side, which grew rapidly in the last months of its development, accompanied with severe pain. Upon abdominal section the tumor was found to be universally adherent. This was a case requiring the greatest care in the separation of the adhesions from the uterus, broad ligaments, bladder, and all surrounding parts, the operation being necessarily slow and occupying about one hour. Notwithstanding that this was a public operation, and one of the most difficult that surgeons meet with, the patient went on to perfect recovery without a rise of temperature beyond 100°.

CASE IV.—Was operated upon April 27th, 1889. Mrs. F., Chicago, age 35, French; housewife; family history good; referred by Dr. O'Shea. This patient had suffered for many

years, and had been under the treatment of many physicians, without relief that was satisfactory. She was relieved by rest in bed, under the treatment of several physicians during the time she was kept in bed, but the moment she assumed the erect position and attempted to do her work the old trouble returned. Upon examination there was easily discovered an enlargement in the neighborhood of the ovary, and an operation was advised. This enlargement was not greater, perhaps, than an orange, but the patient was very fat, and I can say that under the circumstances, with the abdominal surface loaded with fat, especially in a patient who has never been pregnant, whose abdominal walls has never been distended, an operation of this kind is attended with many difficulties. This patient went on to perfect and complete recovery without rise of temperature. Discharged cured May 30th.

CASE V.—On May 4th, 1889, I had another multilocular ovarian cyst with adhesions. Hattie K., age 9 years. Three Rivers, Mich.; German; school girl; family and previous history good; duration of present disease, five months. Five months ago a small tumor was noticed in the abdomen; this increased very rapidly, attaining a diameter of eight inches, as ascertained after removal. Its pressure upon the rectum made it very difficult to secure an evacuation of the bowels, the large intestines being filled with masses of feces at the time of operation.

The abdominal section showed universal adhesions, which were difficult to manage. The patient did well until the third night, when she became restless, got out of bed and sat in a chair, the nurse being asleep. From this time she began to sink, dying from exhaustion the fifth day. The autopsy showed the wound and the abdominal cavity to be in a perfectly normal condition. Previous to the operation cathartics and enemata had not secured an evacuation of the bowels; this not only increased the difficulty of the operation, but gave the patient more to bear after it.

CASE VI.—The next case was one of papillomatous cyst. Mrs. S., Nebraska, age 32; American; housewife; family and previous history good. This patient gave a history of having found, six months previous to appearing at the clinic, a small tumor in the abdomen, which did not seem to increase in size, but the abdomen became rapidly distended, so that when she presented herself for examination it was as large as at full term of pregnancy, and full of fluid. No tumor could be found by external examination, but with the history given by the patient of having found a tumor before the abdomen became distended, and by vaginal examination, it was possible upon one side—I think the right—to get a very indistinct impression through the fingers of the presence of

some hard substance high above the vaginal roof, and a diagnosis was made of probable ovarian cyst, and an operation advised, which was consented to. At the abdominal section a large quantity of free fluid was discharged from the abdominal cavity, and as soon as this was emptied out there appeared the source of trouble. Here again was one of the most difficult cases to be met with under any circumstances. The entire pelvic cavity was occluded by a mass of papillomatous growth which obscured from view, at first, the exact position of the uterus and bladder. There was also present in this case something which I had not met before: after the fluid was emptied out I was feeling around to determine the nature of the case, when I felt in the peritoneal cavity a mass of soft material the nature of which I could not distinguish with my finger. Finally I got it through the opening in the abdominal wall, and pulled out a mass of papillomatous growth as large as my fist, which was attached to the rest of the growth by means of a pedicle as large as ordinary twine. How this mass could be nourished through it I could not imagine. Those familiar with these cases know that the surgeon will be able to find somewhere a separation between the cyst wall and the surrounding tissues of the pelvic cavity, and as soon as the fingers get into this opening it will be rather easy to deliver the tumor. Of course the hemorrhage is pretty free at first, but it is to be remembered that as soon as the separation is completed, no matter how universal the adhesions seem to be, and the base is tied, the bleeding ceases. There were many raw surfaces left after the separation, which were covered as much as possible by fastening together neighboring portions of normal peritoneum with continuous catgut sutures. A glass drain was used. This case, difficult as it was, went on to recovery without any rise of temperature exceeding 100° F. Discharged cured September 27th, 1889.

CASE VII.—The next case, operated upon August 17th, 1889, was a small fibroid in the posterior wall of the uterus, and cystic left ovary. Mrs. B., Merrill, Wis., age 37; American; housewife; referred by Dr. Munroe. This case is of no particular interest; there were no difficulties whatever attending the operation, which consisted in abdominal section and removal of left ovary. She went on to perfect recovery, and was relieved of the principal symptom of which she complained, severe and periodical attacks of nervousness, which seemingly had not been amenable to treatment of any kind during several years in care of physicians. Discharged cured September 7th.

CASE VIII.—The next case is certainly one of interest to you. The operation was done September 28th, 1889. Mrs.

L., Plainfield, Wis.; American; housewife; 43 years old; family and previous history good until two years ago.

Oöphorectomy was done for a peculiar kind of epilepsy which had existed for two years, coming on every menstrual period and showing no tendency to manifest itself at any other time. At first the attacks were slight and hardly noticeable by the patient or her friends, but they so increased that when the patient came to see me at the hospital she had had every operation done upon her that could be done, so far as the external genitalia were concerned; and notwithstanding the fact that she had, apparently, received all the care that physicians ordinarily give to a patient, she still had these convulsions, and they had increased to such a degree that she had as many as ten positive epileptic convulsions in a day. They never came on until menstruation was started, and they ceased with menstruation. I thought in this case there was a very plain indication for causing the cessation of menstruation, if possible, bringing about the menopause as early as could be done. She was advised to have an operation done for the removal of the ovaries and tubes, which was performed. The stitches were removed on the seventh day; she had no trouble from the operation. She stayed in the hospital for three months, and during that period had a slight convulsion on the second return of the period of menstruation; on the third return she had three convulsions, which were rather severe, the first day of menstruation. Between that and the next return of menstruation she went home. Since that time I have received letters every month from the husband; she has had no convulsions whatever, the occurrence of the convulsions being supplanted by the appearance, at the time of menstruation, of increased nervousness and restlessness. But the husband says in his last letter that this has begun to subside. He also states that her general appearance is becoming more and more like it was previous to her first attack.

CASE IX.—Mrs. S., Three Rivers, Mich.; age 45; American; milliner; previous and family history good. Five years ago patient noticed a small lump in the lower part of the abdomen, which increased very slowly in size until four months ago, since which time it has grown rapidly. Menstruation has been irregular, and entirely absent for four months.

The pedicle was very broad and short. The first ligature did not entirely control the hemorrhage, so a second one had to be applied. The patient recovered normally, being discharged three weeks after the operation.

CASE X.—The next case was a small twelve-pound ovarian cyst; operation done October 15th. Mrs. C. G., Baraboo, Wis., age 28; American; housewife; previous and family history

good; duration of present disease, eighteen months; referred by Dr. English.

There was nothing unusual about it in any way, the patient's recovery being normal and perfect throughout, without rise of temperature.

CASE XI.—On October 19th, 1889, another interesting case was operated upon. Miss A. M., Doland, Dakota, age 19; German; domestic; family and previous history good; duration of present disease, four years.

This girl presented herself with an extensively distended abdomen, and with this history: Four years ago she began to have some abdominal distention, which went on rapidly for a year, when she was tapped and thirty-two pints of fluid withdrawn. The abdomen filled up again in the course of the next year with the same amount of fluid, and the same occurred in the third year; and finally in the fourth year she came under my care and I decided to do the operation of removal of the cyst. In making the vaginal examination in this case, I could feel through the roof of the vagina a hard substance of some kind which ran obliquely across the pelvis from right to left, just as though a lead pencil were placed across; so I concluded that the case was one of dermoid cyst containing bone. The tumor, with contents, weighed forty pounds. The patient went on to complete recovery. I have brought this specimen to show you to-night because it is of considerable interest; it shows the superior maxillary bone, the nasal bone, and part of the frontal and malar bones, and in this part of the upper jaw tissue you will be able to discover teeth. It is interesting because of the mass of bone tissue found within it. The patient was discharged perfectly well November 12th, 1889.

CASE XII.—The next case was one of ruptured papillomatous ovarian cyst. Operation done December 9th, 1889. Mrs. Wm. M., Pilot, Ill., age 40, American; housewife; duration of present disease, two years.

There is nothing about it of special interest, except perhaps that there were so many adhesions and raw surfaces left in the pelvis and abdominal cavity that I deemed it proper to use a drainage tube. The patient was discharged January 13th, 1890. Three months later she is reported as having some evidence of return of disease.

CASE XIII.—The next case was an ovarian cyst; nothing noticeable in connection with it. Operation on February 8th, 1890. Miss Mary F., age 24; American; nurse; family history good, except that her father died after an operation for the removal of a tumor, and a sister died of tuberculosis of lungs. Previous history good.

Ovariectomy was done very quickly, the entire operation

lasting twelve minutes. This girl presented herself with a cyst which we subsequently found contained thirty pounds of fluid; but so far as the girl's appearance went, there was nothing to call attention to her as being diseased or sick in any way. When I uncovered the surface of the abdomen and determined the nature of the trouble, I said to the gentlemen about that I could do a very rapid operation in that case, because I thought the cyst had no adhesions. It has been proven to me on several occasions that when the general health is not affected by the tumor it will not have many adhesions, but when the patient is emaciated and the general health suffers there will be adhesions. Discharged March 14th, 1890, cured, not having had an unfavorable symptom.

CASE XIV.—The next case was a small ovarian cyst of the right ovary and inflamed left tube. Mrs. G. K., Three Rivers, Mich., age 47; German; housewife; referred by Dr. I. Kles; family and previous history good; duration of present disease, four years.

The operation was done March 11th, 1890, and she went on to recovery without difficulty. Discharged cured April 5th, 1890.

CASE XV.—The last laparotomy done was for a cyst of the broad ligament containing eighteen pints of fluid, done March 15th, a week ago. Mrs. W. H. D., Charlotte, Mich., age 61; American; housewife; family history, tuberculosis and carcinoma in the family; previous history good; duration of present disease, two years.

The tumor was at first very slow in growth, but since five months very rapid. It was peeled out of the broad ligament as an entire cyst, the edge of the broad ligament being tied and dropped. The patient has gone on from the day of the operation until the present time without any interference whatever—in fact, says that she feels much better since the operation than before. Discharged cured April 15th.

CASE XVI.—The next case I have to report was done April 16th, 1889. It was a case of ectopic pregnancy. The patient, Mrs. Minnie H., who was referred to me by Dr. O'Shea, of this city, was 26 years old, one living child 8 years old, and three miscarriages. Three months before coming to me she supposed herself to be pregnant; she had missed a term, and in the interval before the second time of menstruation she was seized with severe pains in the pelvis, had symptoms of shock and prostration, and a bloody vaginal discharge. A physician saw her, and detected on vaginal examination a mass on the left side of the uterus, with a considerable swelling projecting up into the abdominal cavity. In a few days she was again seized with the same colicky pain in the pelvis,

and again had a bloody vaginal discharge. She was brought to the hospital and placed under my care, and I diagnosed ectopic pregnancy. An operation was done for its relief, before the class. The abdomen was opened and the ruptured tube discovered. After the removal of great masses of blood the tube and sac were opened freely; no fetus was found, but parts of the placental tissue were found, removed, and examined. In this case I thought it was too hazardous to attempt the removal of the Fallopian tube; the opening that was made in it was stitched into the edges of the abdominal wound, and then all the accumulated blood was scooped out of the cavity by the fingers and otherwise, and the cavity filled with iodoform gauze. At intervals of two or three days portions of the gauze were removed until the cavity finally shrivelled up and closed. The woman left the hospital well, and is well to-day.

CASE XVII.—The next operation was done not long ago, March 4th, 1890. Mrs. S. J., Lake View, Ill., 40 years old; Swedish; housewife; previous history good; referred by Dr. Palmer. The woman is still in the hospital. The history is similar to that of Case XVI. in the development of evidences of pregnancy and the commencement of symptoms of rupture at the time of operation. In this bottle there are portions of the clots that were removed and saved for examination. In both of these cases there had been a long interval between the last pregnancy and the occurrence of this supposed pregnancy, in the first case eight years and in the last case nine years. This is an important factor in these cases. I think Mr. Tait insists that it is one of the principal signs to be remembered. In many of these cases there is this history of a long period of years between pregnancies; then the cessation of menstruation; then comes the history, at the end of two months, of severe colicky pain in the lower portion of the abdomen, an extreme pain causing shock and prostration, all the evidences of blood loss and vaginal discharge, and in many cases the extrusion of the decidua through the vagina. The patient told me pieces of skin were discharged through the vagina. This patient was operated upon before the class. There were found in the abdominal cavity large masses of blood filling up the pelvis. The Fallopian tube upon that side was ten times its normal size, with an opening through which protruded large clots of blood. These were all cleaned out and a ligature thrown around the Fallopian tube between the sac and the uterus, and the tube removed. In this case, as I had cleaned everything out and then removed the sac, there was nothing to sew to the abdominal walls. Here was a large cavity with little particles of blood that I was afraid to leave inside by attempting to sew it up, so I filled the cavity

with iodoform gauze and let the intestines come down against it, and sewed up the wound. This gauze was left in several days without any disturbance, because the patient showed no reason why there should be any disturbance of it, then we commenced to pull the gauze away; every day a piece was pulled away, and it kept perfectly sweet and clean. The abdominal wound is healed and the woman will be well in a short time. The patient was discharged cured April 26th, 1890.

CASE XVIII.—Mrs. A. L., Chicago, age 33; Canadian; housewife; family history good; previous history good until date of marriage, twelve years ago; referred by Dr. Munroe. Operated on June 8th, 1889. Discharged September 3d, 1889.

CASE XIX.—Operation September 28th, 1889; discharged November, 1889. Mrs. Wm. H., age 25; American; housewife; family history tubercular; previous history good until one year ago; referred by Dr. Knox. The disease commenced with severe pain in lower part of the abdomen. A swelling appeared in this region, evacuating a large amount of pus through the bowels, which had been repeated several times. There was a resonant tumor in the right iliac region just above Poupart's ligament. Abdominal section disclosed a right pyo-salpinx with universal adhesions. The sac could not be drawn up into the abdominal incision.

An opening was made into the abscess from the vagina by means of a pair of long curved scissors guided by the hand in the abdominal cavity, and a rubber drain was introduced. In doing this the bladder was wounded. The abscess drained nicely; the wound of the bladder healed under the use of a retention catheter for one week. The abdominal wound healed normally.

CASE XX.—Operation January 7th, 1890. Mrs. Fannie S., Chicago, age 44; three children; American; housewife; family and previous history fair. Seven months ago first felt tenderness in the lower portion of the abdomen; a month later first noticed some swelling. Patient was treated in Cook County Hospital for three months; lost much flesh, became very weak, had febrile attacks, the evening temperature reached 101°. Incision in the median line, aspiration of eight ounces of pus, sewing of sac to abdominal wall, free opening of sac, introduction of drainage tube and iodoform gauze tampon. Abdominal wound healed and the abscess cavity drained well, a sinus containing a drainage tube and discharging a small amount of pus still persisting.

I don't know that I need to say very much about these last three cases; they are all pyo-salpinx and pelvic abscess, and all recovered. I imagine any one who has much laparotomy work

to do will bear me out in saying that these cases of pelvic abscess very frequently present difficulties that are troublesome to overcome, even in an ordinary operating room, surrounded only by assistants. There is considerable trouble as to the outcome of many of these cases, because they are so apt to be surrounded by adhesions, and they are so apt to form under-layers or to form adhesions in the neighborhood of deleterious fluid, which has a tendency to go towards the peritoneal cavity; hence they have to be handled carefully. These cases presented no particular difficulties, except that, in two of them, from an old opening into the rectum there had come, in one on the right and in the other on the left side, a gassy tumor—circumscribed in character, well out towards the ileum, in one case below Poupart's ligament and in the other above—which was tympanitic, crackling under pressure of the finger, showing the presence of gas, yet not enough pus in its formation to cause it to come to the surface and ulcerate through. In both cases laparotomy was done. The case that did not recover from the abdominal section was one of pyo-salpinx. This cyst was peculiar, in that it showed a disposition to go above the pelvis towards the abdominal walls. The woman had been in several hospitals, and I had decided that, notwithstanding it was high up, with its acute course, tenderness, and peculiar feel, there was pus in it, and I advised her to have abdominal section done to find out, and we did find it. The cyst wall was fastened to the abdominal wall, and the cavity packed with iodoform gauze. She recovered without difficulty.

CASE XXI.—The next case was a cyst of the pancreas. Mrs. W. E. S., Carthage, Mo., age 24; family and previous history good. The operation was done December 11th. Four years ago this patient noticed a small round tumor in the neighborhood of the pancreas. It did not show much disposition to increase in size at first. Two years ago she became pregnant, and during the pregnancy it did not show any disposition to grow; but after delivery it grew rapidly, so that when she presented herself the upper half of the abdominal cavity was filled with a fluctuating tumor. It could be differentiated as belonging to this portion of the abdominal cavity, because the resonance was all below; and it could be diagnosed as a post-peritoneal growth from the fact that here and there, by careful percussion over the surface, circumscribed resonance could be determined, marking the course of the intestines between the abdominal walls and the tumor. It was diagnosed to be a pancreatic cyst, partly from the history and partly from the examination. An incision was made through the abdominal walls, and of course as soon as the intestines made their appearance the diagnosis was complete. Crossing over the sur-

face of the tumor were many large veins and arteries from the mesentery and the omentum, and the question came up what it was best to do. Now, when I have a doubt about any sort of growth or cyst, especially if its contents are harmful, I make up my mind to carry out the same plan as carried out with reference to abdominal abscesses—*i.e.*, to shut off the peritoneal cavity first, so it will not be affected by anything that comes out of the cyst wall. The cyst wall was fastened by sutures to the centre of the incision all the way round. Then the abdominal incision was closed up to this point, and an opening made, and twelve pints of clear, yellowish fluid discharged which proved to be pancreatic. The cavity was washed out thoroughly until the fluid came out clear, and then the cavity was packed with iodoform gauze, which kept it perfectly aseptic. This gauze was removed from day to day, the cyst wall shrivelled up and the cavity disappeared, and the patient was cured at the end of two months. She has since remained very well.

CASE XXII.—The next case is interesting; it was not a female, but a male. Mr. J. G. K., Boscobel, Wis., age 32; American; farmer; family and previous history good; referred by Dr. Collins.

Male patients represent what I am after as well as do the female patients, *i.e.*, the doing of these operations before large assemblies. This was a large papilloma of the kidney. He came to us with a greatly distended abdomen upon the right side, with the history of a growth commencing posteriorly just below the ribs and extending downward to the ileum. It seemed to fluctuate and was very elastic. An incision was made to uncover it, and according to the methods I have already described. The post-peritoneal covering was stitched to the abdominal edges and an opening was made into the mass. It was found not to be fluid, but to be made up of a mass of papillomatous degeneration connected with the kidney. If there ever was a case which demonstrated the beneficial effects of this manner of treating large cavities and keeping them from septic trouble, this was one. Nothing could be more likely to take upon itself septic action. This large cavity was filled to overflowing with iodoform gauze, and there never was any septic trouble, the cavity filling up quickly and the gauze being removed as it filled up. The patient recovered entirely from the operation, and was discharged after three months, a sinus remaining.

CASE XXIII.—The next case, operated upon August 27th, 1889, is one which you will excuse me for presenting to you, as I have presented it to the Chicago Medical Society. Mrs. B., La Valle, Wis., age 26; German; housewife; mother of two healthy children; family and previous history good.

This woman came to me with a tumor of the left kidney as large as a cocoanut. The diagnosis was made and its position determined by the rules we carry out in these cases. The specimen is on this plate; it proves to be an adenoma of the left kidney. It is interesting as showing that the mass of kidney has been thinned out, and that the cavity is filled up with the tumor. Upon this side you see a complete cast of the pelvis of the kidney terminating in the ureter. This tumor was removed by the anterior incision opening carefully into the peritoneal cavity, making an incision in the posterior peritoneum in the outer side and in the course of the descending colon, carrying the colon over to the right, exposing the kidney and removing it, making drainage through the posterior wall by passing scissors through. This woman was four months pregnant when this operation was done, but it caused no trouble, and she went on to full term and was delivered of a healthy child, recovered, and is well to-day. Patient discharged cured September 27th. At end of eight weeks was able to do her own housework.

CASE XXIV.—The next case I have already presented to this Society. Operation May 25th, 1889. Mrs. F., Chicago, age 40; English; housewife; family and previous history good; referred by Dr. Bryan. It is a large uterine myoma, which makes up another of the deaths in this series, but one which probably could have been avoided. Patient died May 30th of intestinal obstruction without inflammation.

CASE XXV.—In this case an epithelioma of the uterus was removed by vaginal hysterectomy; operation September 24th, 1889. Mrs. Lydia H., Chicago, age 44; American; housewife; one child; family and previous history good; duration of disease, one year.

There is nothing particularly interesting in this case, except that profuse hemorrhage occurred some six hours after the operation, during a fit of vomiting, and when I came to examine her I found upon the left side the tissues at the base of the forceps had pulled out and left the uterine artery free. By the application of tamponing the hemorrhage was stopped and never recurred, and the patient went on to recovery. Patient discharged cured October 12th, 1889.

The next three cases you will allow me to pass by without much reference to them; they are cases that you are not particularly interested in, one a cancer of the stomach, the others of the liver and mesentery. In the first case laparotomy was done for the purpose of relieving the patient, if possible, by opening an anastomosis between the stomach and the seat of the trouble. In the other cases operation was done for the removal of a very painful carcinomatous nodule at the umbilicus. It may be well for me to say that cases of devel-

opment of a very hard, tense, somewhat circumscribed mass affecting the umbilicus and surrounding tissue of the abdominal walls to a slight degree, accompanied with severe symptoms of emaciation pointing to severe and troublesome disease, will almost always indicate the presence of carcinomatous disease affecting the liver.

CASE XXVI.—Operation April 2d; died April 3d. Mr. S., Bloomington, Ill., age 53; carpenter; family history excellent; previous history, many years dyspepsia; present symptoms those of carcinoma occluding pylorus; patient extremely emaciated, not having taken nourishment by mouth for weeks. Operation, gastro-enterostomy. Patient died twenty-four hours after the operation, from exhaustion.

CASE XXVII.—January 22d, 1890. John R., Reedsburg, Wis., 50 years old; American; farmer; family and previous history good; duration of disease, five months. The wound healed normally.

CASE XXVIII.—Operation October 12th, 1889. Died suddenly, probably of thrombosis of pulmonary artery; autopsy not permitted. Mrs. Louis B., Chicago, age 51; German; housewife; family and previous history good until a year ago; referred by Dr. Adolphus.

CASE XXIX.—Operation March 8th, 1890. Mr. A. R., Chicago, age 29; American; street-car conductor; family and previous history good; referred by Dr. Bridge; duration of disease, ten months.

Has suffered pain and tenderness in the ilio-cecal region for ten months. During this time he has had three attacks characterized by severe pain, high fever, and increased induration in the affected region. Last attack came on three weeks ago. Treatment: incision over cecum four inches long into the abdominal cavity. Numerous adhesions were found between folds of intestine. A large piece of omentum, hard and contracted by inflammation, was found adherent to the cecum and abdominal walls; was ligated and removed. The cecum was adherent throughout to the iliac fossa; the appendix could not be found. Recovery perfectly normal. Patient discharged cured April 2d.

CASE XXX.—Mr. John L., Chicago, age 40; American; mantel setter; family history bad; previous history good; duration of present disease, several months.

The last case is one in which I did laparotomy for the purpose of relieving a distended abdomen which examination showed to be filled with fluid. Without displacing this fluid, by pretty firm pressure of the hand in different directions it was possible to determine some nodulated masses here and there in the peritoneal cavity. Diagnosis was made of tubercular degeneration of the peritoneum, and abdominal section

done for the purpose of establishing drainage and taking off the pressure from the organ, and possibly leading to the reported recovery in such cases. An operation was done and the cavity of the peritoneum found full of fluid, and the peritoneum and abdominal walls covered with nodules in all directions, the omentum rolled up into wads, and these filled with tubercular nodules. Drainage was used, and the patient recovered from the operation without difficulty.

This presents to you a series of 30 cases. Of these, 15 were ovarian, and out of the 15 but 1 death. In this series there were 2 extra-uterine pregnancies, 3 pyo-salpinx, all recoveries; 1 cyst of the pancreas, 1 recovery; 2 troubles of the kidney—1 complete removal of the kidney, the other partial removal—both recoveries; 2 troubles of the uterus, 1 cancer with perfect recovery, 1 large myoma with death; 3 cases of carcinoma, 1 of the stomach, 2 of the liver and other organs (in that of the stomach, patient died; of the liver and other organs, 1 recovery and 1 death); appendicitis, 1 case, 1 recovery; tuberculosis of the peritoneum, 1 case, 1 recovery.

As you look over this list, you will see that I am not doing myself justice in putting on it two cases of attempt to remove well-marked cancer of the liver and stomach; they might possibly be left out, but I am well satisfied to leave it as it is. Thirty cases with twenty-six recoveries and four deaths is a record that I do not think can be exceeded anywhere. I am inclined to think it is an innovation, so far as this country is concerned, doing these operations before a large class.

I think I have had the hardihood before to remark, for which I was reproved, that, so far as ovarian tumors are concerned, the removal of a simple ovarian tumor is about the simplest operation a surgeon can do. But what I wish to call attention to principally is the fact that in different cities a great proportion of the large amounts of money that are given for hospital purposes have been expended in putting up special rooms for laparatomies, with all inside walls and ceilings of marble, and so arranged that it is impossible for microbes to get in or out. In some places the patient is as absolutely isolated as a case of small-pox. Physicians who see the case are let in in small squads, a few at a time, into these specially prepared rooms, and this is done under the impression that something outside the surroundings of the patient must be done in order that the success of the operation shall be brought up to the standard the profession believes in. But I contend all of that is useless. I do not believe any patient's life was ever saved by marble walls or tessellated pavements. My own belief, which I put in force so far as these thirty cases were concerned—cases that were taken without selection, that represented the moderately difficult and the severely difficult

—is that it is what is put into the abdomen, the preparation of the operator and his assistants, of everything that touches the case about the wound, from which safety comes.

DR. NELSON.—I am very glad such a record has been made in this country, and I believe we can demonstrate eventually that microbes, while they may be carried, do not have wings and are not likely to be blown about in our operating rooms. If we, our instruments, our ligatures, our assistants, do not carry them, I believe, with the reporter of these remarkable cases, we are not likely to get them into the patient. I do believe that there is something in the patients, that is, in their condition of health and strength and vigor, as to susceptibility to influence from the microbes or germs. Whatever may be the exciting cause of the disease, many patients in good strength and vigor will destroy, take up, or make away with—if you please—many of these germs, whereas those who are not strong and vigorous will not and cannot do it. Although it will make perhaps but little difference in a series of cases of this sort, where good, bad, and indifferent have to be taken, yet the condition of the patient at the time of operation is frequently an important factor, I think, in recovery, as well as the utmost care bestowed. I am certainly exceedingly pleased to find such a demonstration as this of the possibility of operating where only care of the patient and those immediately touching the patient is especially recognized, and not so much is thought about the atmosphere around or in apartments at a distance from the patient.

DR. BYFORD.—I have the satisfaction of knowing that while Dr. Parkes was operating in this way I was doing the same. Thinking to surprise him, I one day spoke to him about my work, and found out to my surprise what he was doing.

I commenced in the winter of 1888 to perform peritoneal sections before the class of medical students in the amphitheatre of St. Luke's Hospital. On the first Wednesday in January, 1888, I gave my first clinic at St. Luke's Hospital, removing diseased uterine appendages. At my second clinic, a week later, I removed an ovarian tumor containing three pints of fluid. A few weeks later I removed an ovary by vaginal section at the clinic. The next winter I opened the abdomen twice before the class. Up to that time I had selected my cases, for I was told that if I had a death I might be blamed for reckless operating. During the past winter session I operated upon every available case, opening the abdomen six times before the class. As I give only twelve clinical lectures each winter, this was as many cases as I could get in without excluding too much other material more important to the medical student. All these cases recovered without a sign of sepsis or other bad symptom attributable to the method of operating.

I found no difference in the result from my private cases. I could add many more if I included operations before classes of six or eight from the Post-Graduate Medical School, but I am now referring to those cases where medical students came without preparation, as to other clinics.

As test cases I may mention the following: In the case of ovariectomy above mentioned the abdominal fat was five inches thick; the patient was insane, had cystitis, and escaped from her room four days after the operation and went to the bath room. She recovered without a bad symptom except restlessness.

In another case, in attempting to drain an abscess under the abdominal walls, the whole thing parted from the walls and opened into the abdominal cavity. I did not in the least expect to have a laparotomy, had no preparation for one. Our hands, sponges, and instruments had been bathed in pus. I washed out the cavity and used drainage above and also into the vagina, and packed the pus surfaces with iodoform gauze. The patient got well. The temperature went up to 101° F. the next day, but it came down in a few hours, and she got along as well as though there had been no pus to deal with. In a case of pyo-salpinx I had the abdominal cavity open nearly two hours. An abscess of the ovary had over a year before opened out through the vagina, and when that contracted it brought the uterus, broad ligament, and suppurating tube back over it. The omentum and intestines, adherent over that, formed an almost impassable barrier to the pelvis. After enucleating the abscesses I spent some little time trying to check the hemorrhage, which threatened to destroy the feeble patient. I finally tamponed the pelvis with iodoform gauze, and left the tampon there. She had no sepsis or other unfavorable symptom.

To my mind these cases show that there is a possibility, if we work carefully, of doing these operations before students, and giving them the benefit of some training in abdominal section. I know of no kind of surgery in which it is as necessary for a man to have clinical experience before doing operations as in abdominal surgery.

I agree with the doctor fully, except perhaps on one point. That is about ovarian tumors. There is nothing easier to remove than a simple ovarian cyst, but I do not think I have met with more than three simple ovarian cysts in a year, although I have removed quite a number. Suppuration, development under the broad ligament, rectum, or colon, extensive adhesions, malignant character, etc., etc., render ovariectomy one of the most formidable of operations. When the absurd notion shall have died out of the professional mind that it is better to wait until an ovarian tumor interferes with the comfort of the

patient before removing it, then ovariectomy will more often mean simple ovariectomy, and the death rate will at last be so small as to frighten no one.

DR. LEE.—Mr. President: It seems this method of doing laparotomy is almost co-extensive. I have been in a number of places where I have seen laparotomy performed before large classes, and in as ill-ventilated and ill-prepared amphitheatres as could well be found. In the Post-Graduate Medical School in New York, which has hardly any of the modern ideas carried out in it, which has hardly any appliances for such operations, I saw laparotomy performed, in December, in the presence of probably twenty-five students; and if the number had been larger it would have been all the same, as I was informed it was the custom to make operations before such classes as should present themselves in the amphitheatre.

DR. MARTIN.—Mr. President: It is interesting to know the methods of those operating in amphitheatres before large classes. I think it would also be interesting to know the methods employed for preparing the assistants, instruments, nurses, and the preparatory treatment of patients. I think that all operators have different forms that are gone through with, and it would certainly be very interesting to know Dr. Parkes' method for preparing those who take part in an operation.

I would like to speak in regard to the method of securing the broad ligament in vaginal hysterectomy. I think it will be noticed in the reports of cases at present that while the broad-ligament forceps is used pretty generally, the majority of operators prefer to ligate the base of the broad ligament with strong silk—possibly not only with one ligature but two or three, if easily reached—and cutting that portion away so that the broad-ligament clamp will have a very much smaller portion to secure; it being a fact that the broad-ligament clamp, even the strongest, will not secure all portions of the ligament with equal pressure. Some portions are liable to draw out and bleed. A number of such cases are on record.

I think the point mentioned by the President is well taken. In fact, it would have saved me a similar difficulty if in a recent case I had looked much more carefully after securing the arteries that are liable to be severed when the vaginal section is made. In this case, before the patient was put to bed all hemorrhage was secured, so far as the broad ligament was concerned; but I was called up in the middle of the night, the house doctor stating that secondary hemorrhage had taken place. Putting the patient on the table, I found the hemorrhage had been entirely from an artery in the corner of the vagina. The patient was pulseless, but with stimulation revived, and subsequently recovered.

DR. T. J. WATKINS.—I think the report of these very in-

teresting cases of Prof. Parkes shows that the good results of laparatomy depend much more upon the cleanliness of the patient, the instruments, the operator and his assistants, than upon the so-called "aseptic" conditions of the air of the operating room.

As long ago as 1883 Dr. Donald McLean did laparatomies before the students at the University of Michigan in the hospital amphitheatre. The students were permitted to go directly, without changing their clothing, from the dissecting to the operating room; yet in no one of his cases so operated on did any evidence of air infection develop.

DR. BAYARD HOLMES.—Mr. President: There are only two methods by which infection of any wound may take place: one is called air infection, the other contact infection. The danger from air infection has been proved by all investigators to be comparatively slight, while the real danger lies almost entirely in contact infection. Upon some plates that I exposed for twenty-four hours at one time in a closed room of the fifth story of a building in the centre of this city, twelve colonies developed to each square inch, and probably not one in fifty was of pyogenic bacteria. In the bacteriological laboratory we are accustomed to open gelatin tubes and other nutrition material for several minutes without the least expectation of any infection of the nutrient material. Plates of gelatin three or four inches square are exposed sometimes for five minutes, and only rarely does one become infected with any form of growth, not to mention pathogenic growth; so the danger from air infection is, you may say, almost nothing. The danger from contact infection is greater, and yet it is not as great as we have been led to suppose.

There is one other element in this case which would not apply to other cases. The dangers which we fear in opening the peritoneal cavity are due to the infection with facultative parasites; that is to say, the infection with parasites that ordinarily live a saprophytic existence, but are able to take on a parasitic existence when in a favorable locality. The human body exists to-day because it has developed a resistance to that form of infection in all those localities where it is most exposed to it. The skin and the mucous membrane are adequate protection against the facultative parasites. Now, the serous cavities also have some resistance, and that resistance is greatest where the danger of infection is greatest. Through the intestines, only a line away from the peritoneum, there is a mass of material full of these facultative parasites, and the peritoneum is very apt to be infected through the lymphatics from the contents of the bowel, hence the peritoneum has a very great resistance to infection of this kind; but that resistance is not found in the serous cavities which

surround the lungs, the heart, and the larger joints, and I predict that without the use of antiseptic solutions no such series of thirty cases could be found where the pleural cavity, where the meningeal cavity, or where the large joints were opened.

There is one other point that is worthy of consideration by every operator, and that is the fact that it is an antiseptic precaution to make as small a hole in the abdomen as possible, to keep it open as short a time as possible, and use as few instruments as possible; and I look upon the success of Dr. Parkes in an open and dirty amphitheatre, with every source of contamination from the air, as due to the care which he bestows upon his instruments and sponges, and the fact that he operates rapidly, and that he uses his hands, and does not depend upon fifteen or twenty instruments and many assistants to do what his fingers will do as well alone.

DR. W. W. JAGGARD.—Apart from any personal feeling, as a Chicago physician I am very proud of Dr. Parkes and his record. I think it is one of the most remarkable papers I have ever had the pleasure of hearing. I think to Dr. Parkes must be accorded priority in establishing in this country the method of operating before a large class. It is not the same to operate before five or six or twenty-five as before a class of five hundred men. Dr. McLean, in Ann Arbor, did not do this thing; that was before the days of antiseptic surgery. Here we have an antiseptic surgeon, a man who has adopted modern methods, avowing his belief in the importance of contact infection.

Again, it is a remarkable fact that such an immense amount of material could be gathered together in any one clinic. I do not think there is another clinic in the country that has produced such an amount of material, and I am not aware of any on the Continent of Europe, unless it be that of Billroth in Vienna; and during my term of two years there I saw no such material as is described by Dr. Parkes.

While the paper is a strong argument for contact infection, it is by no means a demonstration. There are cases that arise—not from air infection (Kümmel and others showed conclusively, five or six years ago, that air infection undoubtedly plays a very subordinate rôle)—but there is a mode of infection called self-infection, in which the woman actually infects herself; in which her unclean skin or dirty fingers, or micro-organisms lodged about the pubic hair or in the vaginal or cervical secretions, will produce infection. It is not only important that subjective antiseptics receive careful attention, but it is also important that objective antiseptics be attended to; there should be absolute sterilization of the field of operation. The term self-infection is not well chosen, and a few months

ago Dr. Holmes criticised me on that point severely and justly. The term is a misnomer, but until we have some better word to express the idea of objective infection I think we should retain this term.

In puerperal fever it is necessary to recognize two methods of infection: contact infection, ninety-nine out of one hundred; self-infection, one out of one hundred.

As regards the individual cases, I was particularly interested in the case of menstrual epilepsy, and I had hoped to hear some remarks on the subject from Dr. Church. I have been looking up this matter somewhat in detail. I have three or four cases of epilepsy under observation in which the menstrual epoch seems to sustain some relation to the epilepsy, and I have about made up my mind to perform oöphorectomy in one case. My observations of Dr. Goodell's cases in Philadelphia did not favor the operation. And in the case reported by Dr. Parkes, the period of time that has elapsed since the operation is too brief to enable one to make any positive deduction. But it is one of the clearest cases of which I have knowledge.

The case of removal of kidney in pregnancy is of uncommon interest, particularly to the obstetrician, and sustains a recent doctrine that it does not make much difference what organ you take out above the level of the fundus or above the lower uterine segment, so long as you leave the uterine cavity intact. On the other hand, a slight operation on the vulva or lower part of the vagina or uterus is apt to be followed by interruption of the pregnancy.

Not at all in the way of criticism, but for information, I would like to inquire concerning the indication for operation in the case of enlargement of the ovary, the size of the tumor, and the reason for removing it. Ovaries do come under one's observation that are slightly enlarged. I have a case under observation now in which one ovary is nearly as large as my fist, but perfectly mobile, and productive of no symptoms.

DR. ARCHIBALD CHURCH.—Mr. President: I came here this evening by chance invitation, and had no idea of taking up the time of the gentlemen, but I am glad to say a few words in regard to the case Dr. Jaggard has particularly mentioned—a case of epilepsy apparently due to derangement of the function of menstruation. This strikes me as being of great interest, and I cannot recall any instance which points out more clearly the relation which sometimes is to be found between neuroses of a functional sort, like epilepsy, and peripheral irritation. There is no question in my mind that in the case cited the indications for operation were clear and imperative, and under similar circumstances I think any one

would be justified in proceeding surgically in this form of epilepsy. As Dr. Jaggard has said, however, the time is as yet too short to decide as to the real value of the operation in this particular instance, though it certainly promises to be a cure. I did not understand whether the operation had resulted in causing cessation of menstruation or whether there was yet a discharge of blood. Certainly the periodical susceptibility does recur, as there is a tendency to disturbance of the nervous system at intervals corresponding to the menstrual epochs. But if menstruation still exists in spite of the removal of the ovaries, the question might arise as to whether removal of the uterus and tubes would also be indicated, and whether Péan is justified in the extensive operation he does in these cases.

I have seen two cases of epilepsy which were associated with the menstrual function, coming on very much as in this patient, but in which the convulsions were not limited so completely to the menstrual epoch, and both of which terminated favorably with the menopause; but this cannot be anticipated as a rule. In my mind there is no question of the ability of irritation, ovarian or uterine or in the tubes, to produce epilepsy. Nor is there any question, in my estimation, of the advisability of operation in clearly marked cases.

DR. J. H. ETHERIDGE.—It seems to me, in view of the fact that most of us remember the tremendously particular preparations made ten or twelve years ago—spraying the room, using antiseptic precautions, etc.—as compared with the simplicity of the present method, it would be well for the speaker of the evening to detail a little *in extenso* the technique of the operations he has done and the preparations for them.

DR. PARKES.—In rising to close the discussion, I would express my thanks for the favorable manner in which this paper has been received. My friend Dr. Byford still will persist in saying that ovarian tumors united to the rectum and other parts of the abdomen are difficult cases, and I am glad to agree with him. My proposition is that a simple, unattached ovarian cyst is the simplest operation I have ever had anything to do with.

I hope Dr. Lee has not received the impression that I wished to assert that I was the originator and the only man to operate before bodies of men, but merely that operation before a general class is, so far as my acquaintance with other cities in this country is concerned, an innovation. I have seen the operation done many times in the presence of a good many men, but I have never seen it done in the presence of a large class—from four hundred to five hundred students—and I know there are few institutions where it is done as a

regular thing, done just the same as an abscess is opened or any surgical operation is performed.

I am very glad indeed that two of the gentlemen have suggested that I should state what I believe in reference to the technique of these operations. They are not simple at all, but are the most rigorous preparations that can be made. I am especially pleased to have the point of self-infection referred to by Dr. Jaggard, because just as much care is taken with every one of these patients as was ever taken for operation in a private room. It is my rule, from which I seldom depart, to have the patient under my close inspection and control three days before the operation, and during that time I try to disinfect the intestinal tract as possibly a source of self-infection. The patient is given freely of cathartics, and the intestines are emptied out entirely in every way by injections until the abdomen is as flat as it can be made, and by this means the intestines are kept out of the way during the operation, which is very important. Every operator knows that when the intestines are full or distended with gas it is the most troublesome thing in the world to get them out of the way. The patient is put into bed and kept in bed, and I think that is important. She is given a full bath of the entire body the first day before going to bed, and when she goes to bed all the hairy surfaces are shaven close, and then a special wash is given over the abdomen and genitalia; this consists of three or four washes with soap and water, particular attention being paid to the umbilicus. This is very important and should be done regularly. The line of the incision is washed with ether, and there is applied to the surface of the abdomen, the night before the operation, a compress of 2½-per-cent solution of carbolic acid covered with an impervious dressing, and this is left on until the abdomen is uncovered for the operation. Not only is that done, but the vagina also is prepared with the bichloride douche, which is followed by one of sterilized water. The vagina is irrigated, not only for the purpose of getting rid of anything that may be a source of infection through the vagina or vulva, but to prepare it for interference, if necessary to enter it for any purpose during the operation. The instruments are all specially prepared. I believe in having a large number of them at hand, so as to be prepared for anything. The instruments are prepared by being boiled thoroughly in water until everything is dead. They are prepared each time and are used for nothing else; that is another thing—I do not think these instruments should be used for all sorts of operations. I have the same assistants—with the exception of the interne, who is always an assistant—about the case, and they are trained in the preparation of themselves, which consists in their washing with soap and

water and scrubbing brush, then with antiseptic solutions, then with soap and water, afterwards covering the clothing with a gown so that the clothing is not brought into contact with the patient at the time of operation. The patient is wound with blankets passing about the shoulders and legs, leaving exposed to view only the surface of the abdomen. All these parts are covered with clean dry towels first, then by towels wet in a 2½-per-cent solution of carbolic acid. I do not believe the wet towel should be brought in contact with the patient's body, as I think it increases the shock. You know it is a personal matter with me to prepare the patient as to shock. I believe quinine and morphine are of benefit, so all my patients receive five grains of quinine and one-quarter of a grain of morphine.

I was glad to hear Dr. Holmes speak of the incision. I believe in a small incision and I believe in a large one. I believe when one gets accustomed to working he can do the work through a small incision, but a novice will need a large incision. Another thing of importance is that the peritoneum should not be disturbed much; the intestines should always be kept well out of the way and never allowed to come into the wound, if possible to avoid it—and in the majority of cases it is possible—and the field of operation is perfectly under the control of the operator. I believe that adhesions should never be torn or severed until they can be seen. I think a great deal of the bleeding that bothers surgeons comes from the fact that they cannot see what they are doing.

I believe I have gone over *in extenso* all I can say. Of course, the silks, the sponges, and everything else that is used should be prepared according to the best rules that are given with reference to making them perfectly aseptic. I never allow an assistant to put his hands or an instrument into the peritoneal cavity unless I direct him to do so; I keep everything out of the peritoneal cavity as far as possible. It is proper for me to say that no antiseptic solutions are ever introduced into the peritoneal cavity, even when pus is present, other than sterilized water or a mild solution of boric acid.

TYPHLOITIS WITH RECOVERY BY PERFORATION INTO THE RECTUM.

DR. BAYARD HOLMES.—My specimen does not bear upon the paper of the evening, but is of some interest. It is from a post-mortem I made to-day, and it may be interesting from a diagnostic point of view. This is the rectum cut open, this is a part of the ascending colon, connected with the rectum by the vermiform appendix three and one-half inches long; just beneath is the ureter running to the right kidney, and here, still lower, are the iliac vessels. The appendix is open from

the cecum up to its middle point, and from the rectum up to the same point, but nothing will pass through beyond that. We accidentally tore it here in getting out a calculus which lay half-way between the stricture and the rectum. This ureter, as you see, is enormous in size. The pelvis of the kidney was dilated, and the kidney had undergone a peculiar degeneration. This specimen is of no direct interest to you except as it shows how a typhlitis may end spontaneously. Besides making an abscess outward, it may end by perforation into any viscus, into the peritoneal cavity, or into the connective tissue spaces about. Suppose there was no abscess, it might have perforated into the ureter, into the iliac vein or artery, or it might have perforated into the bladder or rectum, and in a woman might perforate into the uterus, and in case of perforation into the peritoneal cavity it might produce an abscess only or might produce general septic peritonitis. It might perforate into the connective tissue spaces, into the abdominal wall and pelvic floor, or show itself in any other part of the body where the tissues are connected. I exhibit it because I think it is of some diagnostic importance. You might have a tumor resulting from typhlitis by dilatation of the ureter, impaction behind the constricted rectum or small intestine, or aneurism of the iliac artery. It might be important to distinguish any one of these from ovarian tumor. Typhlitis must be considered when symptoms of pelvic inflammation are present and when pyo-nephrosis is diagnosed.

TRANSACTIONS OF THE OBSTETRICAL AND GYNECOLOGICAL SOCIETY OF WASHINGTON.

Stated Meeting, January 3d, 1890.

DR. JOSEPH TABER JOHNSON, *President, in the Chair.*

DR. S. S. ADAMS read a paper entitled

EPIDEMIC DYSENTERY IN YOUNG CHILDREN.¹

In opening the discussion, DR. M. F. CUTHBERT said that the Society was indebted to Dr. Adams for an interesting and valuable paper. The doctor had gone over the ground so thoroughly that little was left for him to say. There was

¹ See original article in this number, page 814.

one feature, however, to which he would call attention, and that was the differential diagnosis between typhoid fever and dysentery. He had recently seen a case with Dr. Dillenback which was supposed to be dysentery. There were frequent discharges of mucus and pus. The treatment pursued was that usual in dysentery, but was without benefit. The patient was put upon liquid diet, and the case ran the typical course of typhoid fever. In Dr. Adams' first case a post-mortem would have elucidated matters. As to cocaine, he regarded three-fourths of a grain as heroic for so young a child. A plan of treatment that he had found most valuable in these cases was hot-water injections—which were sometimes borated or salicylated—hot applications over the abdomen, liquid diet, and the smallest quantity of opium possible to relieve tenesmus.

DR. G. B. HARRISON had not intended saying anything, but this, being an important subject, should not be ignored. Supposing it possible to confound dysentery and typhoid fever, he could not see how feeding would possibly lead to a fatal issue. Solid food is out of the question in both diseases. He considered the typical diet of dysentery to be buttermilk and the concentrated meat essences. With sincere deference for time-honored customs, he had never seen the *rationale* of the starch-and-laudanum enema. Given a *colloid* substance on one side of an animal membrane, and a *saline* fluid like the blood on the other, *osmose* would occur outwardly, *or at least to the colloid*. Yet we introduce medicines in a colloid medium, hoping they will be absorbed. Cold water seemed a better vehicle, and he thought he had practical evidence that it is.

As a lad, upon tide-water James River, he had become familiar with a routine treatment of acute dysentery by means of "broken doses" of calomel and Dover's powder, repeated every two or three hours until the stools acquired fecal smell. In practice here he only remembered one case in which (that of a *roué* of advanced years) he had to supplement this treatment with suppositories of lead and opium.

The question of improper food as a cause of some forms of acute dysentery, and the supply to the system of something wanting, by way of remedy, is an interesting one, and forms a field of useful study. During the second battle of Cold Harbor (1864) he had been seized with severe dysentery, which seemed to yield to a mess of boiled potato tops. Doubtless in camp life and in the crowded portions of cities a scorbutic condition underlies the disease in many cases. He insisted upon recumbency, and, in children too old for diapers, the use of the bedpan.

DR. H. D. FRY said he desired to speak on one point only,

that of rectal irrigation, which he considered the most rational treatment for dysentery—much preferable to medication by the mouth or by suppositories. His reliance is upon that method. Plain water, cold or hot, solutions of borax, boracic acid, alum, or salicylic acid, are most satisfactory. In one case of colitis with hemorrhage he had used creolin with good results. The comfort afforded by these injections is so great that he had known children to ask for their administration, as was the case in his own child, which was ill with colitis. His method of treatment was to irrigate the bowel after each evacuation, and, if the movements were infrequent, to administer an enema to unload the bowels and then use the antiseptic irrigation.

DR. A. F. A. KING said the cardinal principle in commencing treatment was purgation, whether constipation existed or not. It would remove all offending, irritating secretions. While these things remain all treatment is futile. Castor oil or a saline would be a good purgative. Diet is of the utmost importance, and should be in a liquid state. He thought that the administration of sufficient water was too frequently overlooked. He would give cold water *ad libitum*, even to the production of emesis, and then the symptoms would abate. Mucilaginous substances add much to the efficacy of the water. He did not believe in suppositories except to relieve tenesmus. He favored the administration of butter-milk because of the large amount of water it contained. Water is the important element. Water by the mouth is as good as by enemata. The persistent application of poultices, as hot as can be borne, gives great relief. Brandy and ether should be freely given to relieve prostration.

DR. S. C. BUSEY said he entirely coincided with Dr. King as to the efficacy of purgatives and poultices, and he recognized the importance of a liberal supply of water, but he would not recommend it to the extent advocated by Dr. King. He did not think that any physician should be embarrassed as to the differential diagnosis between dysentery and typhoid fever. He had not observed the benefits from cocaine claimed by Dr. Adams, though he had not used the drug in such large doses. His experience coincided with that of Dr. Fry as to the efficacy of rectal irrigation. He was accustomed to have the rectum washed out with warm water, and then, by the use of small medicated injections or suppositories, got the best results. In general he preferred suppositories to starch-water injections, though sometimes the latter may be preferable. The first indication was to relieve the bowels of all their contents by the use of a purgative, then proceed with the administration of the remedies determined upon, given preferably by the rectum, as you thereby relieve the stomach from

embarrassment by drugs. He had found that opium suppositories to relieve tenesmus gave the most satisfactory results if used *soon after* an evacuation. Great prudence should be exercised in the administration of medicated enemata, for, unless carefully given as to time, evacuations may be produced. It is of the utmost importance to keep the patient quiet in bed, to use only liquid diet, and not to delay the administration of stimulants too long. Thrombosis of cerebral vessels may be obviated in children by free administration of diluents. In hemorrhage from the bowel, he had had good results by washing out the bowel and then injecting a solution of sulphate of zinc, gr. ij. to the $\frac{3}{4}$ i. He insisted that the patient should be upon his back when at stool, and always required that the bedpan should be used. There may be an accumulation of feces in the bowel, exciting peristalsis and tenesmus. Castor oil will produce a fecal stool, clearing out the bowel and thus relieving tenesmus for twenty-four hours. He, however, thought calomel to be the best purgative. When he began practice here years ago, a violent epidemic of dysentery prevailed; the practice then in vogue was to use mercurials to pyalism. He believed that it was absolutely necessary to confine closely to the bed all patients suffering from intestinal disease.

DR. S. S. ADAMS, in closing, said that he regretted not having been able to complete his paper by going more thoroughly into the treatment of dysentery. He, however, had used all the remedies recommended except the rectal irrigation, and he was sorry he had not tried that. As to the epidemic character of the disease, he thought that the fact that five of the cases reported occurred in the same locality would confirm the belief that it was epidemic. As to the diagnosis of the cases there was no possible doubt. In the case in which cocaine was used it was a *dernier ressort*, as it was impossible to get the parents to use proper care with the child. Jacobi speaks of the necessity of great caution in the use of rectal injections in children.

DR. KING said he believed in proper alimentation, but water was the best nutriment; it did not require digestion and was so readily absorbed. He would place more reliance upon purgatives than upon astringents and opiates, as the latter will produce constipation and tympanites without relieving the disease.

DR. BUSEY said that beef tea was sometimes objectionable, as it was apt to produce purging. He much preferred mutton broth. Vegetable astringents were admissible only in diarrhea with copious liquid evacuations. He would prefer lead or zinc in dysentery, either in enemata or suppositories.

TRANSACTIONS OF THE OBSTETRICAL
SOCIETY OF LONDON.*Wednesday, June 4th, 1890.*DR. GALABIN, *President, in the Chair.*

Specimens.—MR. BLAND SUTTON: Microscopical Sections and Drawings of the Fallopian Tubes of Monkeys, etc., showing the rugæ. DR. AMAND ROUTH: Apoplectic Ovum. DR. JOHN PHILLIPS: Uterus and Placenta with Fibroid. DR. HERMAN: Uterus with Purulent Senile Endometritis. DR. CULLINGWORTH: Carcinoma of the Ovary.

Demonstration by DR. DAKIN on the

DISSECTION OF A FETUS THE SUBJECT OF RETROFLEXION AND
ECTOPIA VISCERUM.

The specimen had been shown in its recent condition at a former meeting of the Society, when the points worthy of notice in the labor were mentioned. It was now completely dissected and described. The writer considered all the abnormalities primarily due to failure in development of the hinder part of the gut. He detailed them, and endeavored to account for each of them as examples of the chain of ill results arising from this defective development. He came to the following conclusions:

Retroflexion of the fetus and ectopia viscerum may and do occur independently. [They may therefore be associated and yet not have a common cause.]

The only way apparent in which a common cause could act is that described by Duncan and Hurry (Obst. Trans., vol. xxvi.), viz., by shortening or doing away with the umbilical cord, and thus keeping the abdominal surface of the fetus applied to the uterine wall and placenta. The latter, by its close application, prevents closure of the abdomen, keeping apart the centripetally growing edges of the abdominal walls.

This common cause is failure in development of the hinder part of the gut and its processes.

He applied this theory to the present case, and considered the course of events was as follows:

1. Imperfect development of hind gut and therefore of allantois, resulting in (α) absence of umbilical cord, and (?) of

one of the vessels (umbilical arteries) normally projected on the allantois; (b) interference with outflow of urine, probably at allantoic end of ureters, producing right hydronephrosis and absence of left kidney and ureter.

2. Resulting from (a) close application of anterior surface of fetus to placenta and uterine wall, causing—

3. (a) Retroflexion, with its effects on the spine (meningocele and spina bifida occulta) at the point of flexion; (b) pressure effects on the side of the body held in contact with placenta and uterine wall; and (c) failure to close of abdominal wall.

DR. SINCLAIR STEVENSON read a paper on

A CASE OF SPURIOUS PREGNANCY SIMULATING ECTOPIC
GESTATION.

Mrs. S., æt. 24, multipara. After four months' amenorrhea with the usual phenomena of pregnancy, had severe pains and a bloody discharge. Three months later she had pains, and passed per vaginam a piece of *skin*. The pain ceased, and the fetal movements, which had also been felt, stopped. The next day she had a profuse discharge, and the abdominal swelling rapidly disappeared. The breasts were secreting milk. From this date she felt ill, having constant pains, and suffered from a muco-purulent discharge. A month later there was a swelling the size of the fist. The os was large and patulous. In the right fornix a soft mass could be plainly felt. The uterus was retroverted and free from adhesions. Its cavity was carefully examined. The diagnosis of an interstitial gestation, with rupture at the fourth month into the broad ligament, was made. Abdominal section was performed, and an ovarian cyst of the left side was found and removed. The other organs were normal. The patient recovered. The author asked whether a cyst which had burst might fill again and yet show no signs of it, such as adhesions or other inflammatory product.

DR. MATTHEWS DUNCAN said he had published a case in which an ovarian cyst of large size was spontaneously evacuated through the uterus. Subsequently, after refilling, ovariectomy was performed, and no trace of connection between the cystoma and the tubes or uterus could be found. In another case pus and feces were discharged in large quantity. The finger could easily pass through the roof of the vagina into the fecal abscess. It soon healed, and in less than three weeks ovariectomy was performed successfully. At the operation search was made, but no trace or connection between bowel and vagina could be found; there were no adhesions in the region of the vaginal roof.

DR. HORROCKS said he had seen a case for one of his surgical colleagues who was about to perform ovariectomy. The tumor burst internally and became much smaller. In three weeks it had refilled, abdominal section was performed, and an ovarian tumor was removed. No trace of the rupture could be made out, either in the form of adhesions or a scar on the cyst.

A paper by DR. ROBERT BOXALL ON

FEVER IN CHILDBED

was then read.

In the first part of this paper the factors which bear universally upon the subject are alone considered; particulars pertaining to individual cases, such as the general condition of the patient and the character of the labor, are not included. In such an extended series as that now presented these items are distributed with such approach to uniformity as to render the omission a matter of little importance.

A series of charts and tables are appended which deal with the 2,762 puerperæ who have been delivered in the General Lying-in Hospital during a period of seven years, from July, 1882, to June, 1889, inclusive.

By this means it is proved:

1. That the proportion of cases affected with fever declined rapidly, and then became steady, but has since diminished slightly.
2. That this decline has in the main resulted from decrease in, and temporary abolition of, cases affected with septicemia and pelvic inflammation.
3. That in the febrile cases both the duration and the height of the fever have diminished.
4. That these changes are identical in point of time with certain changes effected in the hospital service.

Chart I. gives the total number of patients admitted, the number of cases in which the temperature rose above 100° F., the number of patients who were affected with septicemia and pelvic inflammation, and the total average daily amount of fever from all causes (estimated in increments above 100° F.) for each month.

This shows an increase in the number of admissions, a decrease in the number of febrile cases and particularly of septic cases, and a diminution in the amount of fever not only relative but absolute.

But as the number of patients admitted month by month varies so considerably as to render comparison of one month with another a matter of difficulty, separate charts based on percentages are also appended.

Chart II. is divided into four parts.

The first division gives the percentage of patients in whom the temperature rose above 100° F. and the percentage of patients who were affected with septicemia and pelvic inflammation.

This shows that in the whole number of patients delivered in the hospital before and after May, 1884, a drop occurred from 83 per cent to 40.6 per cent in the cases followed by fever, and from 40 per cent to 2.5 per cent in the cases followed by septic fever; and further indicates an improvement in both respects in the months which immediately precede that date.

The second division gives the average daily percentage of patients in hospital with pyrexia and with septicemia and pelvic inflammation.

It will be observed that this division of the chart takes into account both the proportion of febrile to non-febrile cases and the duration of the fever, and also the proportion of septic to non-septic cases and the duration of the fever with which they were associated.

This shows, in comparing all the cases before and after May, 1884, a drop of 39 per cent to 8 per cent in the daily proportion of cases in hospital with fever, and from 27 per cent to 1.6 per cent with septic fever; and further indicates an improvement in both respects in the months which immediately precede that date.

The third division gives the average duration of the fever in days.

This shows, in a comparison of all the febrile cases before and after May, 1884, that the duration of the fever was reduced from 7.7 to 3 days, together with some improvement in this respect also in the months which immediately precede that date.

The fourth division gives the average height of the fever in degrees above 100° F.

This shows an average reduction in the height of the temperature dating from May, 1884, of very nearly 1° F., but no appreciable improvement in this respect in the months which immediately precede that date.

Considered as a whole, Chart II. proves:

That not only has the proportion of febrile to non-febrile cases diminished, but also the proportion of septic to non-septic cases has at the same time still more markedly diminished, that for months together such cases have entirely disappeared, and that simultaneously the duration of the fever has been shortened and its height diminished.

Chart III. expresses these results in a condensed form.

It gives in outline only (white on black ground and *vice versa*) the average amount of pyrexia from all causes per pa-

tient (in days \times degrees above 100° F.). It will be observed that, being the product of the first, third, and fourth divisions of the preceding chart reduced to unity, it takes into account not only the proportion of febrile to non-febrile cases and the duration of the fever, but also the height of the temperature, and therefore, as an index of the condition of the hospital for each month, is not to be surpassed. But as it often happened that patients admitted towards the end of one month had little or no fever until the following month, and that when the attack was prolonged the fever was continued into the month following admission and even later, this line only represents approximately the fever rate for each patient admitted during the month to which it refers. It has, therefore, been placed under the heading of "Approximate Fever Rate."

The true fever rate, *i.e.*, the average amount of pyrexia from all causes (in days \times degrees above 100° F.), for each patient admitted during each month, is given.

This shows that each patient admitted averaged as much as 17 degrees of fever during the puerperium before May, 1884, but only 1 degree after that date; and, further, that the amount was considerably reduced in the months which immediately precede that date.

It may be noted that the true and approximate fever rates very nearly coincide when the cases of severe and prolonged illness are few.

The septic rate, *i.e.*, the average amount of pyrexia due to septicemia and pelvic inflammation (in days \times degrees above 100° F.), for each patient admitted during each month, is also given.

This shows that each person admitted averaged as much as 13 degrees of fever from septicemia and pelvic inflammation alone during the puerperium before May, 1884, but less than half a degree after that date, the amount being often reduced to zero or to a fraction of a degree for months together; and, further, that the amount was apparently reduced in the months which immediately precede that date.

This chart further demonstrates the fact:

1. That the decline in the general fever rate has in the main resulted from decline in the septic rate.
2. That though occasional slight rises have occurred during the last five years, the general tendency has been towards improvement not only in the general fever rate, but also in the septic rate, and that when the general fever rate has risen it has in the main resulted from increase in the septic element.

A tabular statement is given of the more severe cases of illness under three heads, which include all the cases (1) which were detained beyond three weeks, (2) which were transferred to other hospitals, and (3) which ended fatally. A short

account of each of the deaths is given in a record of fatal cases.

By this means the influence of the diminution of febrile illness on the death rate is shown.

The nature of the illness falling under each head is analyzed in turn. A key of reference to the case numbers in each series is added to Chart III. in order to bring the cases of severe illness and the fever rate into mutual relation for each month.

The general fever rate and septic rate as given in Chart III., and the severe cases of illness as given in the tabular statement, taken together, indicate with some degree of precision the state of the hospital at different periods.

May, 1884, marks an important epoch in the hospital's history.

The condition of the hospital before and after that date is commented upon and is summarized in Table II., special attention being drawn to the abrupt decline of septic illness which occurred at that time.

This table shows:

That the death rate from all causes followed the decline in the general fever rate; and that as in the one case the improvement resulted in the main from decrease in the number and severity of cases affected with septicemia and pelvic inflammation, so in the other the decline was mainly wrought by decrease in, and temporary abolition of, the septic element.

Considerable progress, as shown by the decreasing death rate (the only criterion available for that distant date), had been made in the same direction prior to the commencement of the septennial period now under consideration, but, as far as is known, no such comparative immunity from septic illness had been hitherto attained.

The continued decrease in the death rate and the steady diminution of febrile illness, and especially of septic illness, indicate that improvement is still going on.

In the following sections the service of the hospital and the changes which have been effected in it will be considered. The coincidence of these changes with variations in the condition of the hospital will be traced.

A description of the hospital and of the method in which its service has been conducted is detailed. Such alterations of a general hygienic nature as have been effected during the period under consideration are dwelt upon.

Attention is directed to the fact that during the whole of the time the same principles have prevailed, antiseptics have been in constant use, but the details have been changing, especially with regard to the strength and character of the solutions employed. These will be considered in detail in the two succeeding sections.

Wednesday, July 2d, 1890.

A. L. GALABIN, M.D., F.R.C.P., *President, in the Chair.*

Specimens:—DR. HERMAN: Decidua Vera et Reflexa from : very early abortion. DR. CULLINGWORTH: Ruptured Tuba! Gestation.

DR. ROBERT BOXALL read the remainder of his paper on

FEVER IN CHILDBED.

The particular antiseptic agents which have been used at different parts of the period now under consideration are given in Table III., and are also roughly indicated on Chart III.

This shows :

1. That the marked improvement which occurred in May, 1884, coincided in point of time with the substitution of sublimate for carbolic and Condy as the general antiseptics employed.

2. That the gradual decline of septic influence which preceded that date was effected without change in the antiseptic employed.

The antiseptics used during the carbolic and Condy era are considered in detail.

The bearing of the chemical incompatibility of the agents employed during the carbolic and Condy era is discussed.

The gradual decline observed during the later months of that era is attributed in part to the endeavor which was at that time made to obviate the reduction of the permanganate in the solution employed for washing and douching the patient, and in part to the greater efficiency of the midwives and nurses, owing to the adoption of definite rules and directions for their guidance.

It is remarked that the systematic application of general hygienic and antiseptic rules to the service of the institution not only led to a gradual reduction in the frequency and virulence of general septic illness, of pelvic inflammations, of unhealthy lesions of the genitals, as well as of mammary inflammations and of cases of cystitis among the puerperæ; but at the same time effected a decrease in the cases of purulent ophthalmia, of offensively discharging navel, as well as of thrush in infants, and of abscesses on the fingers among the nurses.

It is concluded :

1. That the gradual decline observed in the early months of 1884 was brought about in part by systematic attention to points of general hygiene, more particularly on the part of the

midwives and nurses, and in part by the progressive elaboration of details concerning the use of the antiseptics employed.

2. That the marked improvement which took place in May of the same year was effected in part by the substitution of sublimate for carbolic and Condy as the general antiseptics in use, and in part by the continuance of the same beneficial influences.

Certain relapses which have taken place since that date will be dealt with in the following section.

The antiseptics used during the sublimate era are considered in detail.

The measures taken to prevent deterioration of the solution are discussed.

It is pointed out that neither more general hygienic measures, nor the solution employed for the hands, instruments, etc., nor the lubricant, have suffered appreciable variation, and that the solution employed for washing and douching the genitals has been the only variable element.

Attention is also drawn to the fact :

1. That as no change has been made in the method of administering the douche, its mechanical and ecboic effects have remained unimpaired.

2. That as the strength and character of the antiseptic agents employed in the douche solution have been the only variable factors, corresponding variations in the condition of the hospital afford evidence of their comparative value. Such variations are shown to have taken place ; for when the sublimate douche solution was reduced in strength, and again when the sublimate douche solution was replaced by salufer, the death rate rose and septicemia reasserted its influence. It is remarkable that the only three deaths which have occurred from septic poisoning during the last five years should have taken place in the two short intervals, amounting together to less than twelve weeks, during which these solutions were used.

The period during which salufer douches were employed is considered in detail.

It is pointed out that as salufer was commenced in the middle of one and discontinued in the middle of another month, the advance in the fever rate and in the septic rate does not show to the full extent when all the cases for each month are included, as in the foregoing charts.

Table IV., however, unmistakably indicates a retrograde condition of the hospital during the eight weeks of salufer douching as compared with the fortnight which immediately preceded and which immediately followed.

This shows :

1. That the death rate rose, and from septic poisoning.

2. That the proportion of labors followed by fever, and especially by septic fever, increased.

3. That in the febrile cases both the average duration and the average height of the fever increased.

4. That both the general fever rate and septic rate advanced.

Further, in virtue of this result, it is probable that had the sublimate, not only of the douche solution, but also of that employed for the hands, instruments, etc., and of the lubricant, been replaced by salufer, and had salufer been used in all cases, instead of in those only in which danger was least to be feared, the effect would have been still more disastrous.

It is concluded :

That salufer is inferior to sublimate as an antiseptic agent.

Incidentally evidence has been afforded :

1. Of the value of douche solutions of strong over those of weak antiseptic power.

2. Of the value of antiseptic over mere aseptic douche solutions.

The routine use during puerpery of weak antiseptic or of mere aseptic douche solutions is deprecated.

By way of explanation the suggestion is put forth that septic material collected about the vulva may be carried, in administering the douche, into the uterine cavity, where, escaping immediate destruction, it is liable to become absorbed.

It is concluded :

That unless such an antiseptic solution be used as is capable of effectually and rapidly destroying septic material, and unless the external genitals be carefully washed beforehand with a similar solution, the routine employment of the douche during puerpery is liable, from the danger of unavoidably introducing septic material, to be attended with positive danger to the patient, and that under such circumstances the mechanical and ecboic advantages may be more than counterbalanced by its want of sepsis-destroying power.

Sufficient evidence has been produced to show that even with the routine use of strong sublimate solution the danger still lies less in mercurialism than in sepsis.

It is, therefore, concluded :

That unless and until the manifold sources of septic infection can be traced, and with certainty dealt with outside the body, the routine employment of the douche needs no defence.

Reasons for regarding the Condy douche of the pre-sublimate period as an element of danger are adduced.

Finally, the direct local effect of the different antiseptic agents on the tissues of the body is considered.

It is concluded :

That though this question may have affected to some degree

the comparative results obtained by carbolic acid and sublimate, it does not affect the value of the evidence which has been adduced in support of the inferiority of weak sublimate and of salufer douche solutions.

GENERAL SUMMARY.

1. By a study of the general fever rate, of the septic rate and death rate, and by an analysis of the more severe cases of illness, the state of the hospital has been determined, and variations in its condition have been pointed out.

2. The service of the hospital and the changes effected (both of a general hygienic nature and also such as pertain more particularly to antiseptics) have been described.

3. The coincidence of the changes with variations in the condition of the hospital has been traced.

4. Upon these data it is concluded that a gradual improvement resulted partly from systematic attention to points of general hygiene, and partly from practice in dealing with the antiseptics used, and that a further improvement was effected by the substitution of sublimate for carbolic acid and Cond's fluid as the general antiseptics in use, but that retrogression occurred both when the sublimate douche solution was reduced in strength, and again when the sublimate of the douche solution was replaced by salufer.

5. In virtue of this result it is contended that as an antiseptic agent sublimate is superior to carbolic acid and Cond's fluid, and that salufer is inferior to sublimate.

6. Finally, that as the antiseptic of the douche solution was the only element which suffered variation, the value of strong douche solutions compared with those of weak antiseptic power, and, *a fortiori*, the value of antiseptics compared with mere aseptic douche solutions, is rendered obvious.

DR. BRAXTON HICKS said that he had read a paper at the Dublin meeting of the British Medical Association many years ago "On the Use of Antiseptic Uterine Injections." On that occasion he was opposed by the late Sir James Simpson. He considered that care should be used in injections, especially if the patient was restless, as the thoracic movements caused a tendency to the indrawing of fluids.

DR. HAYES regretted that Dr. Boxall had not included in his report the period when he and Dr. F. Barnes were physicians to the hospital. In 1879, upon the reopening of the hospital under an entirely new régime, the antiseptic rules adopted were those drawn up by Sir Joseph Lister. Absolute phenol, one in twenty, was the antiseptic used for hands and instruments, and one in forty for vaginal injections. Their results were highly satisfactory. He had had only one

case of serious illness, and that was one of sapremia induced by unquestionable disregard of the antiseptic rules. The patient recovered. He had adopted vaginal injections with one in forty or one in eighty carbolic acid in every case for the first week after labor. Dr. F. Barnes used no vaginal injections, and his cases had done equally well. He was struck with this at the time, and he now thought that vaginal douching after labor, as a general rule, was unnecessary; indeed, with the ordinary run of nurses, was dangerous. They were careless about the cleanliness of the tubes, etc. He had, therefore, given it up unless the lochia became offensive or the patient showed symptoms of illness. In suitable cases he advocated intra-uterine injections. He recommended antiseptic absorbent wool in place of diapers.

DR. WALTER GRIFFITH thought there was greater risk in lying-in hospitals than when a patient was confined in her own home. If doctor, nurse, and instruments were clean, all routine douching could be done away with; on the other hand, most people accustomed to habits of cleanliness preferred the douche night and morning for the first few days after labor.

DR. LEITH NAPIER did not think with Dr. Gregg that a single intra-uterine injection of one-sixteenth grain of perchloride of mercury would prevent or check the development of septicemia. He asked whether the risk of routine douching was not greater than that of waiting until indications for douching arose. In inflammatory puerperal cases he thought that frequent douching was hurtful, and that vaginal suppositories of iodoform were preferable. Mercuric perchloride was, on the whole, the best antiseptic for the purpose at present. Creolin answered well and was non-poisonous.

DR. CULLINGWORTH said he was responsible for having introduced salufer in the general lying-in hospitals as a non-poisonous substitute for perchloride of mercury. At present he considered routine douching essential in lying-in hospitals, but not in private practice; though he mentioned that in the lying-in hospitals of Boston and New York the best results were not obtained until the douche had been deliberately abandoned. He thought possibly the salufer had failed through the clogging of the valves and apertures of the apparatus by the salufer, which was thrown down from the solution in considerable quantity. He highly recommended wood-wool pads.

DR. BOXALL, in reply, said that the intra-uterine douche was reserved for cases in which the hand or some instrument had been introduced into the uterus, or in which the fetus was macerated or decomposed, or, again, in which clots or pieces of membrane were retained. In hospital and private practice he used it in such cases immediately after labor, but only

exceptionally during puerpery, and in these he usually employed a soft-rubber catheter or piece of elastic tubing. He thought much harm might be done by douching whenever the discharges were foul. The parts should be examined, beginning at the vulva and washing any part where decomposition was taking place. He thought sublimate solution, one in one thousand, far less irritating to the hands than carbolic acid solution, one in twenty. He employed a sublinrate solution, one in two thousand, during labor and immediately after delivery, but as a rule gave no douche during puerpery. No advantage had been gained by using iodoform suppositories in addition to intra-uterine irrigation, nor did he think they were efficient substitutes for irrigation. He recommended absorbent cotton in place of napkins, and preferred it to wood wool. He advocated the use of strong antiseptics in all cases, because weaker solutions were not so certain in preventing sepsis when the tissues were bruised or otherwise weak.

The Society adjourned until Thursday, October 2d.

REVIEWS.

TRAITÉ PRATIQUE D'ACCOUCHEMENTS. A PRACTICAL TREATISE ON OBSTETRICS. By DR. A. AUVAR, *Accoucheur des Hôpitaux de Paris*. With 534 woodcuts, pp. 788. Octave Doin, Paris, 1890.

In this work the knowledge to which we have attained regarding the scientific application of mechanical principles to the clear understanding of the process of labor is elucidated in the painstaking and eminently practical mode which has characterized the previous writings of the author. Obstetrics as an art is also developed methodically and pleasantly, and we can scarcely call to mind any such voluminous work upon obstetrics that may be so easily and agreeably read.

The first section, upon pregnancy, contains an exhaustive description of the ovum in its various stages of development, together with schemata of embryonal growth that are exceedingly clear and present to the beginner a very distinct idea of a commonly rather complex subject. In this section the maternal changes are also well described from the inception of pregnancy until its termination.

The conduct of a confinement is carefully studied, and the author calls attention to a fact too frequently lost sight of: the antiseptic measures that are nowadays so generally used

are of greater importance prior to delivery than after it, since at the later period the genital surfaces are covered with traumata ready to absorb such germs as may have been allowed to remain in the tract, and which might have been eliminated beforehand. The mode of delivery of the placenta should consist of the application of expression combined with slight traction, care being taken that too much force or violence be not used in either manipulation.

The diagnosis of presentation and position by external manipulation receives due attention, and the various modes of presentation are well illustrated and analyzed.

When treating of the question of nursing, the author states that the majority of chronic diseases are indications against the mother's nursing her child, an exception being made in favor of syphilis, owing to the law of Colles, to wit, that a congenitally syphilitic child never contaminates its mother; and to that of Profeta, namely, that just as a mother who bears a syphilitic child runs no danger while nursing it, so does a child born of a syphilitic mother run no risk from nursing at the mother's breast. This immunity is explained as being probably due to some sort of syphilitic vaccination taking place during pregnancy. In any case, a hired wet-nurse should not be employed, on account of danger to the nurse.

The sections upon puerperal pathology, together with the treatment of the conditions arising through defects in the mother or child and the accidents occurring at the various periods of pregnancy, labor, delivery, and the post-partum, comprise over half of the volume.

The author states that pregnancy confers a comparative immunity against the effects of malaria, and asserts that if a woman be suffering from intermittent fever while pregnant, the oxytocical effects of quinine will not appear, so that the uterine contractions which would have taken place from its exhibition, had the woman not suffered from malaria, will be absent. The breaking out of malarial symptoms after labor is over, so frequently noticed in this country, is also noted by the writer.

Eclampsia, puerperal fever in all its general and localized forms, studied from the standpoint of the latest bacteriological investigations, together with localized extra-genital disturbances, are the subjects of chapters that form in themselves valuable essays. Dystocia from all causes is analyzed with the utmost care, and the operative treatment of difficult labor is studied painstakingly and with a wide knowledge of the literature of the subject, though we notice that in the matter of gastro-elytrotomy, first advised by Joerg in 1806 and later by

Ritgen, he ignores the later work of Thomas, who practically re-created the operation known to us as laparo-elytrotomy.

As a whole the work is exhaustive, clearly written, and a valuable adjunct to the literature of the subject. Not a great deal of new material can be gathered from it, but the author has succeeded in bringing out a work which represents the latest acquisitions of obstetrics and of those branches of the art and science of medicine and surgery which may be applied to it.

G. G. VAN SCHAIK.

A TEXT BOOK OF OBSTETRICS, Including the Pathology and Therapeutics of the Puerperal State. By F. WINCKEL, M.D., Professor of Gynecology and Director of the Royal Univ. Clinic and Hosp. for Women in Munich, etc. Authorized Translation from the *First Germ. Ed.* Edited by J. CLIFTON EDGAR, A.M., M.D., Adjunct Prof. Obst. Med. Dept. Univ. of New York. Pp. 900; 190 illustrations. P. Blakiston, Son & Co., Philadelphia, 1890.

The reputation of its distinguished author is a sufficient guarantee for the value of this work. Written between the years 1882 and 1888, it is well up to date. It is the result of experience and material obtained from the Royal Charity Hospital, the Royal University Obstetrical Clinic of Berlin, the Rostock Clinics of Dresden and Munich, and cases in the author's own private practice, over twenty thousand cases in all, seventeen thousand two hundred of which are from clinics conducted by the author since 1864. The general arrangement of the subjects is most judicious and cannot be criticised. The pathology and management of labor are of course the prominent features; the remaining portions of the work, however, have been treated in a manner befitting their importance. It is a frequent and just complaint that the history of this branch of medicine is too often neglected, both by the student and the author, and for this reason more than the usual space is given to it here. A summary of the literature is given at the head of each chapter. All detailed quotations have been personally procured from the originals, and much material of value and interest is incorporated. These additions make the perusal of the work a labor of pleasure, besides adding greatly to its value. One lays down the book with a heightened admiration for the author's learning, as well as a deep respect for his careful and conservative teaching.

The translation has been faithfully done and is generally satisfactory, though many passages read rather stiffly, and some are involved from a too close following of the German text, the translator having apparently sacrificed beauty of diction to a literal rendition.

The illustrations, save those of instruments, are entirely new, and in general very fairly executed. The type, though rather small for ease in reading, is clear, and the general make-up of the work good.

B. H. W.

A PRACTICAL TEXT BOOK OF THE DISEASES OF WOMEN. By ARTHUR H. N. LEWERS, M.D. Lond., M.R.C.P. Lond., Assistant Obstetric Physician to the London Hospital, etc. *Second Edition.* Pp. 424: 146 illustrations. Small octavo. P. Blakiston, Son & Co., Philadelphia, 1890.

The author of this very practical and concise work certainly has the rare faculty of saying much in a few words, and of saying it clearly and well. The book as a whole is most excellent, though it may be criticised as dwelling too briefly on some important points. Thus in speaking of cervical dilatation, the author describes two methods—the rapid, by means of Hegar's dilators; the slow, by means of tents; omitting all mention of the type of expanding steel dilators, so decidedly popular in this country, and mentioning only incidentally the greater danger of sepsis following the use of sponge tents—a danger which is here thoroughly appreciated, and which has led to their practical abandonment save for certain special and exceptional purposes. Again, in cervical endometritis, "when active treatment has been decided on we pass Ferguson's speculum (tubular) and ascertain the exact direction of the cervical canal with the sound." Then a careful and thorough application of sulphate of copper solution is made to the cervical canal, and repeated twice a week for a time, together with hot douches night and morning. If this does not succeed in a month, we are to try passing a stick of equal parts of fused zinc sulphate and alum into the cervical canal, and, with certain precautions, leaving it there for three hours. "If this treatment does not succeed, the case had better be set down as incurable." But the barest mention is made of the part which a deep cervical tear may have in keeping up the trouble, and *no mention* at all of any measures other than the above for healing or closing the rent. The book is of decided value to a practitioner; but, because of omissions like these, we would only recommend it in connection with others to a beginner.

The chapters devoted to diseases of the tubes and ovaries, and to pelvic inflammations, are to be highly commended and are alone worth the price of the book.

B. H. W.

TRANSACTIONS OF THE SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION. Vol. II. Session of 1889. Pp. 375, Illustrated. Published by the Association; W. E. B. DAVIS, Secretary. Birmingham, Ala., 1890.

This, the second volume of the Transactions of this promising young society, contains many papers of interest and value.

including The Abortive Treatment of Acute Pelvic Inflammation, by Virgil O. Hardon; the Improved Cesarean Section, by W. D. Haggard; Perineorrhaphy, by A. W. Johnstone; Menstruation and the Removal of both Ovaries, by Engelmann; An Experimental Study of Intestinal Anastomosis, by J. D. D. Davis; Intestinal Anastomotic Operations with Segmented Rubber Rings, by A. V. L. Brokaw; Open Treatment of the Abdominal Cavity, by B. E. Hadra; the Treatment of Contracted Bladder by Hot-Water Dilatation, by I. S. Stone; Laparotomy for Intestinal Obstruction, by Cornelius Kollock; What Civilization is Doing for the Human Female, by A. Laphorne Smith; Laparotomy for Extra-Uterine Pregnancy, by Waldo Briggs; and others.

The volume is printed by Dorman, and is the same in style and make-up as last year's.

TRANSACTIONS OF THE SECOND SESSION OF THE INTERCOLONIAL MEDICAL CONGRESS OF AUSTRALIA, held in Melbourne, Victoria, January, 1889. Pp. 1,018; illustrated with woodcuts and fifteen photographic plates. Stillwell & Co., Melbourne, 1889 (P. Blakiston, Son & Co., Philadelphia).

Besides a very large and varied collection of papers of interest in other lines of medicine, this volume contains some fourteen essays (one hundred pages) on gynecological and obstetrical topics by such men as Balls-Headley, W. Gardner, F. C. Batchelor, Felix Meyer, Adam, Chambers, Mannsall, and others, a perusal of which shows most conclusively that our Australian brothers are well versed in the most modern pathology and treatment of gynecic troubles.

ABSTRACTS.

1. BUMM: ON THE UTERO-PLACENTAL BLOOD VESSELS (*Arch. f. Gyn.*, xxxvii., 1).—After reviewing the opinions of various observers, B. goes on to describe the utero-placental circulatory system as he was able to find it in fully developed placenta. He begins with the veins, which are the most easily seen and followed; they lie mostly upon the heights of the cotyledons, more seldom they are upon the border, and never in the septa which the decidua pushes into the depths of the cotyledons; they appear upon the superficial layers of the serotina as tortuous, very thin-walled canals, averaging 0.5 to 1 mm. in diameter in the fresh, uninjected state; they

Fig. 1.



Fig. 2.



Fig. 3.



Fig. 4.

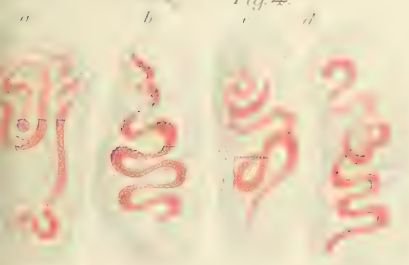


Fig. 5.



Fig. 6.



Fig. 7a.



Fig. 7b.

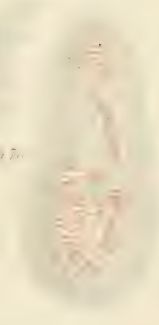


Fig. 7c.



Fig. 7d.



are always filled with blood; sometimes the upper part of their walls has remained attached to the uterus, when they appear as gutter-like canals upon the serotinal covering of the placenta (Figs. 1, 2, 3). The veins may be filled with colored gelatin by a Pravaz syringe; the vessels swell up to double their size, and their tortuosity becomes more distinct; the gelatin penetrates into the intervillous spaces. The innermost layer of wall of a vein is formed by an endothelium, with nuclei somewhat distant from each other; this layer ends at about the opening of the vein in the free placental spaces; externally to the endothelium there is a layer of filiform connective tissue with spindle cells. After a vein has made several turns in the height of the normal layer of separation in the decidua, it turns crosswise against the extreme layer of the serotina, to open in the large placental spaces; the tips of villi are always found united to the borders of the venous openings; the blood in the large placental spaces is uninterruptedly connected with the veins through the villous tips.

The utero-placental arteries are not so plainly seen upon the decidual surface of the placenta, because they are less filled with blood than the veins; they generally show only a fine blood strand within their lumen; they often lie at the border of the cotyledons in the septa which penetrate from the decidua; more seldom they are found with the veins upon the broad surfaces of the cotyledons (Figs. 1, 2, A A). During the separation of the placenta, the arterial vessels are prone to be drawn out of the serotinal tissue, and lie upon the decidual surface as elongated, whitish-gray strands. With the naked eye it may be seen that these strands consist of much-twisted vessels; the torn-off end of the vessel floats free, the opening into the placental spaces is attached to the decidua. The arteries are much more convoluted and tortuous than the veins; they generally do not bifurcate. The internal wall of the arteries, like the veins, is formed by a sharply defined endothelium; external to this there is a layer of fibrous connective tissue with round and occasionally also rod-like (muscular cells?) nuclear bodies; this layer is much more compact and thicker than in the veins, and more sharply separated from the surroundings; this fibrous layer also becomes thinner as the vessel approaches the opening, where it often becomes blended and even supplanted by large decidual cells; the endothelium is here lost. External to the fibrous layer the large-celled decidual tissue abounds, often thickly studded with wandering cells. The arteries, like the veins, open into the intervillous spaces; they penetrate with numerous twistings through the decidua, and open either at right angles into the large blood spaces, or the opening twig gives a final turn and opens in a horizontal direction parallel to the decidual

surface. The mouth of the artery is sometimes somewhat narrowed, in that the wall gives a spur-like projection. The penetration of fetal villi into the vascular lumen, as in the veins, does not take place; the blood current gushes freely from the arteries into the large placental spaces.

Apart from the arterial and venous vessels which are intended for the intervillous circulation, other vessels are found upon the uterine surface of the expelled placenta which are obviously nutrient vessels for the decidua; they are very much finer than the vessels described, and not convoluted; they give off twigs, and terminate in a very sparse capillary system.

The author concludes: He found in the serotinal layer which envelops the surface of the cotyledons a rich network of distorted veins, which open into the intervillous spaces; on the borders of the cotyledons he found numerous cork-screw-like arteries, which penetrate into the septa of the placenta, and empty blood into the interior of the cotyledons. These veins and arteries belong together. In place of a capillary system, the so-called intervillous blood spaces are placed between them. The main stream of the current goes from the border of such cotyledon into which the artery opens to its surface, where the veins carry it away. Each cotyledon forms a distinct circulatory field for the maternal blood. It is only lower down near the chorion that the individual cotyledons cling together. The circulation is the most active in the upper portion of the cotyledons and that nearest to the decidua.

L. R.

EXPLANATION OF PLATE.

FIG. 1. Cotyledon of a mature placenta, viewed from its uterine surface, with arterial (A) and venous (V) vessels in the decidua. Natural size.

FIG. 2. Similar to FIG. 1.

FIG. 3. Placenta succenturiata with its maternal venous and arterial vessels in the decidua. Natural size.

FIG. 4, a, b, c, d. Veins in the decidual layer of a mature placenta.

FIGS. 5 and 6. The same on cross section.

FIG. 7, a, b, c. Arteries in the decidual layer of a mature placenta.

FIG. 8. The same on cross section.

2. VEIT, J.: ON RUPTURE EXTERNALLY OF PYO-SALPINX (*Zeit. f. Geburts. u. Gynäk.*, xvi., 2).—By rupture externally V. means perforation through the abdomen or through the vagina; in both certain conditions are necessary: in the former the tube must be in close contact with the abdominal wall. It is only seldom that a pyo-salpinx reaches such a size that it lies directly against the anterior abdominal wall; if this cause is not present, tumors of the genitalia, especially uterine myomata or ovarian tumors, may so elevate the pyo-salpinx that it lies close to the abdominal wall; of course special situation and development of the neoplasm are essential to this effect. Very similar predisposing causes apply to rupture into the vagina; according to V.'s experience, the adhesion of a pyo-salpinx situated in the cul-de-sac of Douglas is to be regarded

as one of them. Perforation of a pyo-salpinx into the free abdominal cavity leads to acute, generally fatal, peritonitis. The development of the pyo-salpinx in the connective tissue of the broad ligament may serve as a predisposition to rupture into the vagina; but this occurs rarely. The first case described was one of spontaneous rupture of pyo-salpinx into the vagina, myoma of the uterus, drainage, salpingotomy for high temperature, death. The patient was 46 years old, sterile for twenty years; her husband gave rise to suspicions of repeated infection. Patient was well until married, from which time gradual disturbance of health has existed; in the last year menorrhagia; has been sick for six weeks with obscure symptoms, and for fourteen days has had a copious purulent discharge from genitals, with increasing intensity; patient disseminated an extremely offensive odor. Examination revealed a tumor reaching nearly to umbilicus; it was of the consistence of a myoma; connected with it to the left, closer to the posterior portion of the abdomen, was a segment filled with fluid; the myoma penetrated deeply into the pelvis. Pressure upon the soft segment to the left caused the expulsion of the foul fluid. To the left, in the posterior vaginal vault, a small opening was finally found, concealed by vaginal folds. A sound passed through the fistula entered into the cavity. The opening was enlarged by a two-edged knife, and a drainage tube inserted into the pus cavity. After several quarts of carbolyzed solution were passed through, the offensive odor disappeared, never to return. Patient did well for six days, when a febrile movement with a distinctly septic character appeared, with daily chills. Diligent irrigation had no effect upon patient's condition; he then concluded that the tumor in the pelvis so impeded the drainage tube that permanent certainty of outflow could not be obtained, and determined upon laparotomy. On opening abdomen, the myoma was found to the right, a large tubal tumor with thick walls—muscular hypertrophy—to the left. The removal of the tumor was easily effected; the cavity connected with vagina was opened. He sutured the peritoneum over the fistula, and drained the left portion of the canal through the vagina under the sutures. Patient died on third day.

The second case was one of spontaneous rupture of a pyo-salpinx communicating with an ovarian cyst; drainage; death from hemorrhage. Patient had a purulent discharge from fistulous canal in abdomen below the umbilicus. The canal led to a large tumor which reached nearly to pelvis. The latter was opened per vaginam and a drainage tube inserted. The discharge gradually diminished, but very profuse bleedings suddenly set in from both openings, which were several times controlled, but patient died from hemorrhage. On

post-mortem a large branch of the spermatic was found eroded by the prolonged suppuration.

The third case, a married woman in the thirties, was the subject of rupture of a pyo-salpinx through the abdomen; myoma in the pelvis; drainage; eventual improvement, but persistence of moderate suppuration. She visited a watering place for the relief of bleeding from a myoma. An abscess opened through abdomen above Poupart's ligament, from which constant foul pus was discharged. On her return it was attempted to split the fistula, but the bladder was punctured. After this had closed, the fistula was drained, but with little success—only the patient could irrigate better. She then came to the author. He found a fistulous canal which penetrated deeply into the pelvis, and which he could follow with the finger nearly to the vagina. He then punctured through the vagina against the finger in the fistula. A drainage tube, from vagina to the abdominal fistula, was inserted. The patient recovered, but the abscess persisted. She then went to Berlin. Here all drainage tubes were left off, because the patient, despite drainage and irrigation, could always express great quantities of pus from a particular spot in the depths of the pelvis. After the fistula had closed, Schröder attempted to reach the tumor—the seat of the deep suppuration—by an incision above Poupart's ligament, opened the peritoneum in several places, but failed to find the tumor. Upon more energetic procedures, in which he opened the peritoneum in the posterior wall of the large pelvis, he was enabled to reach the tumor, which he considered a pyo-salpinx. The latter was drained and shrivelled, but despite all efforts a small fistula persists.

Case IV. was a married peasant woman, for twenty-four years sterile, with a pyo-salpinx which ruptured spontaneously into the vagina. She suffered from a purulent discharge from the genitals, which was obdurate to treatment and which had existed for four months. On examination, a small opening with everted borders was found, through which the sound passed into a large cavity to the right of the uterus. The tumor filled the entire pelvis. The fistula was incised, and the finger at once entered the large cavity, which possessed several segments. The wall was quite thick, and the tumor was fixed on all sides and did not collapse when emptied. Drainage rapidly removed the evil odor and caused gradual shrinking of the tumor. Patient recovered her former health.

The most conspicuous symptom in these patients was the stench of the discharge. The character of this discharge constitutes the great danger in radical attempts at cure. It will be hazardous to open the abdomen after rupture into the

vagina. The author does not advance anything definite as regards the etiology of this affection.

L. R.

3. MEYER, LEOPOLD: ALBUMINURIA IN PREGNANCY AND LABOR (*Zeitsch. f. Geb. u. Gynäk.*, xvi., 2).—The author examined the urine of 1,127 pregnant women in the pursuit of this study, and of 1,138 women in labor. The urine examined was in all cases removed by the catheter. The test for albumin was by means of boiling and the addition of nitric acid. Quantitative analysis was not made. In all cases where even a trace of albumin was obtained the urine was placed in a cone-shaped vessel and the sediment examined by the microscope.

Albuminuria in Pregnancy.—Albumin and albuminuria comprise many things. We should keep in view serumalbuminuria, globulinuria, peptonuria, hemi-albuminuria, etc., but to the clinician this differentiation is not feasible. The latter must call in aid the microscope, and the greatest weight is to be attached to the presence of urinary casts. Where the latter exist the strong probability is that the albuminuria is of renal origin, which is to be separated from the other form of albuminuria, which, in a large number of cases, is evidently not renal. The presence of the so-called renal epithelial cells is of great moment. Of the 1,127 pregnant women whose urine was examined, the latter was found free from albumin in 93.3 per cent; it contained "doubtful" albumin without casts in 1 per cent; albumin without casts, 3.2 per cent; albumin with "doubtful" casts, 0.3 per cent; albumin with casts, 1.9 per cent; together with 2 cases, subjects of gonorrhea, which showed albumin without casts, and one case with renal fistula which showed albumin and casts. Deducting the last three, albumin was found beyond doubt in 61 cases, or 5.4 per cent. These figures, for themselves, are of little interest; the important thing is to investigate the conditions which dispose to albuminuria, and its significance for mother and fetus. As regards the former, little is to be learned from material gathered in hospitals, the mode of life of the patients and their surroundings not being accessible to interpretation. As regards the symptoms during pregnancy, albuminuria without casts very seldom shows any symptoms. When they exist, they generally depend upon cystitis or pyelitis. Albuminuria with casts in general also shows no symptoms.

Albuminuria during Labor.—The author investigated the urine of 1,138 non-selected cases, and found urine without albumin in 75 per cent, with albumin in 25 per cent. The albuminuria may increase during the progress of labor, or may be absent at one time, to appear later on. The albuminuria found during labor unquestionably begins during the parturient act.

Course of Albuminuria during Pregnancy and Labor.—The rapid disappearance of albuminuria—as well as that accompanied by eclampsia—on the cessation of labor led to an unusually favorable prognosis for the affection; later investigations indicated a certain reservation, as it was found that the trouble was prone to become chronic. From his researches the author concludes that the albuminuria without casts appearing during labor rapidly disappears on its termination. It is possible that these patients have an exaggerated predisposition to catheter cystitis, and especially those in whom albuminuria existed during pregnancy; in these also the affection may terminate spontaneously, but disappears more slowly than in the first-mentioned cases, and sometimes persists for some time. The more considerable the albuminuria during labor, the longer time was required for its subsidence; but the period of recovery is not dependent upon the quantity of the casts. As regards the termination of cases of albuminuria with casts observed during pregnancy, the percentage of uncured was a large one. The prognosis in this affection must be regarded as very doubtful as regards recovery; albuminuria with casts appearing during labor in most cases terminates after birth, generally four days post partum; a small proportion remains uncured.

The Relationship between Albuminuria and the Vitality of the Fetus and the Alterations in the Placenta.—In women with albuminuria relatively more frequent premature labors took place, showing especially in cases in which the quantity of the albuminuria was considerable; but the observations of the author show no particular causative effects in albuminuria as regards the death of the fetus. The alterations in the placenta in general comprise a premature separation of the organ, with the appearance of so-called white infarcts which have been associated with the renal affection in the mother. Of the 1,344 placenta investigated, white infarcts as well as evidences of premature separation were found in but 26. While it is evident that a certain relationship exists between renal affections and changes in the placenta, it is not of such indubitable and conspicuous a character as is claimed by some.

L. R.

4. NEY, JACOB: ON THE PRESENCE OF SUGAR IN THE URINE DURING PREGNANCY, LABOR, AND THE PUERPERIUM (*Arch. f. Gynäk.*, xxxv., 2).—The views of authors with regard to this subject are very conflicting. Brücke contends that the diabetes exists because there are greater quantities of sugar than normally in circulation in the blood. Others say that in the normal state no sugar is excreted. The author took observations to discover whether sugar was present

during pregnancy, labor, and the lying-in period, and whether any pathological significance attached to such occurrence. The investigations of others have shown that sugar does exist under these circumstances, whether pathological or normal. The author used three reactions to determine the point—Trommer's, Böttger's, and fermentation; quantitative proof was obtained by Fehling's solution and the polariscope. In every test two methods were employed, and the presence of sugar only determined when both gave similar reactions; in cases where there was doubt it was always considered that no sugar existed. In more than a third of the cases the reaction of the urine tested was compared to the urine of healthy men, to avoid error. Before making Böttger's test, albumin that existed was removed. The number of cases investigated was one hundred and seventy-two. His researches were made to determine, if possible, the following questions: 1. Does sugar appear only before or also during labor, and has the parturient act any influence upon its presence? 2. Does the sugar appear only in the puerperium, and has its appearance any connection with febrile occurrences? 3. Is the appearance of sugar in the urine before as well as after birth a pathological or a physiological condition? 4. What is the condition of the children in the cases in which sugar appears in the urine in normal lying-in states and in those in which no sugar has been shown to exist?

The urine was examined before labor in twenty-four cases, in only four of which could sugar be positively recognized. In all of these cases the urine was tested during and immediately after delivery; in none could the appearance of sugar be noted during the period of delivery, except in those where it had existed previously. It could readily be believed that labor should induce diabetes in consequence of psychical excitement. But the investigation in every case was negative. The cases in which sugar existed during pregnancy were exclusively women with well-developed mammae, from which milk could already be expressed. While, therefore, a "physiological diabetes" during gestation is comparatively infrequent, it is the rule in the lying-in state. Of one hundred and forty-eight cases, 77.7 per cent showed affirmative results; or it may be said that during the puerperium four-fifths of the cases have sugar in the urine as a rule; that, too, decided tension of the breasts, combined with copious appearance of sugar in the urine, occurs without concomitant fever.

Regarding the proposition, Is the appearance of sugar in the urine a physiological or a pathological phenomenon? the author found sugar in the urine only when its occurrence was very marked before labor. In the puerperium, therefore, all circumstances which interfere with or abolish lacta-

tion become the causes of diabetes; some of these (mastitis) cause a stasis which is promptly followed by the appearance of sugar, which generally disappears upon the removal or subsidence of the cause. The sugar appears, as a rule, in the urine of women in whom lactation is very active—in good nurses in the best sense of the word. The author, therefore, believes the occurrence to be a normal physiological phenomenon. The sugar appears on the third or fourth day, to rapidly disappear, probably as a consequence of a diminution in the lacteal secretion or because the infant demands so much milk that no stasis can take place. The proportion in which he found the sugar was from 0.8 per cent to one per cent. In those cases in which sugar was found copiously for a long time, the breast milk sufficed for all the wants of the child; in other cases resort had to be made to the bottle. The sugar found in the urine of pregnant and lying-in women is always milk sugar, not grape sugar.

L. R.

5. CHROBAK, R.: ON VAGINAL ENUCLEATION OF UTERINE FIBROMATA (*Medizinischen Jahrbüchern*).—The author believes firmly that the enucleation or isolated extirpation of growths in the uterus is far more in keeping with the rules of modern conservative surgery than the removal of the growth together with the uterus and its adnexa; this advantage accrues to every enucleation, be it the abdominal or the vaginal. A woman without her internal genital organs may be relieved of many severe and threatening symptoms, but is a mutilated being, condemned forever to forego her most important life duty—very often, too, psychically a changed woman. As a first requisite for enucleation a certain amount of preparation on the part of the cervix—*i.e.*, shortening, dilatation, softening—is now universally recognized. In a normal long, rigid cervix with narrow uterine os the operation is contra-indicated. He has never seen any evil consequences follow dilatation of the cervix, as claimed by some. Success in this procedure depends upon a great many factors, which all men do not possess in equal proportions. If the adhesion of the tumor to its bed is too firm to admit of enucleation, it may be removed with knife, scissors, cecraseur, or the galvanic loop; the stump cicatrizes if no infection occurs; but such a procedure should be held as a *dernier ressort*. We can never be certain that we have absolutely prevented infection of the stump. If at all possible, enucleation should be completed at one sitting. The author bases his conclusions upon an experience with nineteen cases, of which he lost but one; in this case the vaginal vault and the cervix were narrowed by adhesions, and it was impossible to remove all of the growth. For dilatation he used

a tupelo tent once or twice, to be immediately removed upon the appearance of the slightest febrile rise. After twenty-four to twenty-six hours dilatation was completed with the hard-rubber dilators of Hegar. Lacerations may occur if care is not taken. He has had to discard sponge tents because of their unreliability, although no other means will produce the same amount of serous infiltration and loosening of the cervical tissue. Five to six radial incisions had to be made where dilatation alone did not suffice; occasionally deep cuts had to be made, necessitating the previous ligation of the lower branch of the uterine artery. In two of C.'s cases multiple and subserous myomata were successfully enucleated. He generally operated without speculum, drawing the uterus down by two or more tenaculum forceps attached high up; a transverse cut through the capsule is generally best, which may be enhanced in some cases by a longitudinal incision. If possible, the fingers are the best instruments for the enucleation itself. Powerful tractions upon the growth with a view to lifting it from its bed are to be condemned as dangerous. The obstetrical forceps, cephalotribe, and cranioclast must be used in very large tumors; but it is better to reduce the growth's size and avoid these powerful instruments if possible. Antiseptic precautions are, of course, enjoined. In recent years C. has employed the uterine tampon with drainage. Ergotin should be regularly given after the operation. L. R.

6. BRAUN-FERNWALD, E. V.: TWO PRIMARY LAPARATOMIES IN EXTRA-UTERINE PREGNANCY (*Arch. f. Gyn.*, xxxvii., 2).—The most important procedure during the performance of laparotomy, after the fetus has been removed, is to thoroughly ligate the site of placental insertion with silk before separating the organ. The first patient was 31 years old, had had two labors and one miscarriage. Seven months previously she was taken with abdominal pains; five months before, her menses discontinued, and the woman felt pregnant since then; the pains disappeared, and she left the hospital. Later on the abdominal pains recurred, especially upon walking. She always had the feeling as if the uterus were protruding. She felt life only in the upper part of the abdomen. She was examined under anesthesia, and extra-uterine pregnancy diagnosed. On opening the abdomen the fetal sac was found adherent to the anterior abdominal wall. The peritoneal cavity was not opened; the fetus was withdrawn living and placenta removed, and the site of its insertion sutured; very much bleeding; death after operation. The child weighed 2,380 gm. and was 43 cm. long.

The second patient had always been in good health; had two children; suffered constantly from vomiting with this

pregnancy. In the tenth month, labor not having yet set in, patient came to hospital; was very emaciated; no appetite; constipation; cough for two months. From the history and examination it was concluded that the ovisac had ruptured and the mature living fetus escaped into the abdominal cavity. Incision 10 to 12 cm. in the linea alba, and opening of peritoneum, followed by the immediate expulsion of a clear, yellowish fluid. The fetus (female) was enclosed in a coagulum of fibrin-like material, almost asphyxiated, but soon cried lustily. After cleansing the abdominal cavity the umbilicus was found to open into the collapsed, ruptured ovisac by an orifice almost as large as a fist. The placenta lay on the posterior surface of the uterus and the broad ligament, penetrating deep into the pouch of Douglas, and appeared to be attached to the descending colon by firm adhesions. On attempting to separate these adhesions after their double ligation, the finger penetrated the placenta, which bled freely. The right ligament was then tied, and the separation of the placenta was then readily accomplished without hemorrhage. The uterus was about the size of a small child's head. The portion of placenta lying on the pouch of Douglas, and firmly attached to the peritoneum, could not be removed, and its borders were sutured to the abdominal wound, so that a funnel-shaped cavity, entirely separated from the abdominal, remained, in which the uterus lay, partly separated from the ligaments. The parietal peritoneum was sutured to the serosa uteri in the bladder region, and the abdominal coverings closed above. The extruded uterus was pierced by a long needle, and an elastic ligature tied about the cervix; the fundus was excised, and the cut surface touched with a Paquelin cautery; the uterine cavity was lined by a decidua almost one-quarter cm. thick, beginning to separate; the parietal peritoneum was sutured to within 1 cm. of the stump, and a wick of iodoform, about as thick as a finger, inserted into the deepest portion of the Douglas pouch through the opening. Operation lasted one and one-half hours. The child, weighing 3,100 gm. and 51 cm. long, died within twelve hours from "aspiration" pneumonia. Mother made an uninterrupted recovery.

[Thomas (Trans. Am. Gynecological Society, 1884) narrates an almost similar procedure adopted by him in a case of laparotomy for extra-uterine pregnancy in which the placenta was firmly attached to the ascending, transverse, and descending colon. He passed a cobbler's stitch about an inch and a half from the intestine all around, following the course of the colon from caput coli to sigmoid flexure; the placenta was then cut away, the remaining portion puckered up like the mouth of a bag and sewn to the abdominal wound. A large glass drainage tube was kept in the pouch, which was large enough

to admit the fist. The patient suffered from acute septicemia, but eventually recovered. The funnel-shaped cavity rapidly filled up with granulations.]

L. R.

7. FALK, E.: HYDRASTININ IN UTERINE HEMORRHAGE (*Arch. f. Gyn.*, xxxvii., 2).—The author has used this drug with success in cases of congestive dysmenorrhea, bleeding from the virgin uterus, essential bleeding, hemorrhage from diseased condition of the uterine tissue (endometritis, metritis), from parametritis, pyo-salpinx, etc., and in myomata. The remedy was the most efficacious in cases of hyperplastic endometritis, congestive dysmenorrhea, and the virgin uterus. The hemorrhage from myomata may be lessened by the drug. The success is somewhat less in chronic endometritis, in which the uterus is enlarged and the contractility of its muscular tissue lost. Bleeding from severe neuroses does not respond well to the drug. F. believes that the drug causes contraction of the blood vessels; through this action on the abdominal vessels less blood flows to the genitalia, causing relative anemia of the uterus, which acts as an excitant upon the muscularis and causes contraction. He generally employs a ten-per-cent watery solution of the drug, which keeps well, and injects from one-half to a whole syringe-ful (*i.e.*, 0.05 to 0.1 gm. of hydrastinin). Five to six days before menstruation, and in myomata, daily injections of 0.05 gm. are made; during the bleeding, daily injections of 0.1 gm. After five hundred injections he has seen no inflammatory reaction follow the procedure.

L. R.

8. EBERHART, F.: THE TREATMENT OF RETENTION OF MEMBRANES (*Zeit. f. Geburts. u. Gynäk.*, xvi., 2).—The causes of retention may be irregular or inefficient contractions of the uterus, inopportune procedures for the removal of the after-birth, or pathological changes in the histological structure of the fetal membranes. Among the latter, pathologico-anatomical alterations in the various sections of the decidua are probably the most active. Retention may lead to hemorrhage, or it may cause decomposition. If larger or smaller placental pieces remain behind, bleeding occurs as a necessity; decomposition may occur, but not necessarily. If membranous portions remain behind, they do not of themselves produce hemorrhage, not being in direct vascular connection. If the retention be at once followed by bleeding, the latter is due to the bad or inefficient uterine contractions which caused the retention. Many consider the retention of portions of the ovisac within the uterine cavity as innocuous. Kaltenbach, supported by Döderlein and Winter, bespeaks the absence of germs in the cavum uteri as a cause, and declares that the re-

tained product only undergoes decomposition on the entrance of germs from without, or when a portion projects into the vagina; for this reason we need not remove the uterine portion, contenting ourselves with the cervical or vaginal segments. Care should be taken to keep the vagina thereafter as aseptic as possible. Kaltenbach has practised this method for over five years with invariable success. Eberhart favors a rigid prophylaxis. If the placenta be expressed only after the characteristic signs of completed separation are apparent (flattening of the uterus antero-posteriorly, elevation of the fundus with good contractions, further expulsion of the cord), retention will only be observed in pathological changes. The expectant plan is followed; that is, the placenta is expressed only if from one and one-half to two hours have passed without it being spontaneously expelled.

If now retention has already taken place, the uterine portion is undisturbed; only that projecting into the vagina is removed by inserting two or three fingers; the uterus is never entered. Ergotin preparations are given to hasten the separation of membranes.

L. R.

9. SPAETH, F.: THE OPERATIVE TREATMENT OF EXTRA-UTERINE PREGNANCY (*Zeit. f. Geburts. u. Gynäk.*, xvi., 2).—Four cases are cited which occurred in the private clinic of Prochownick in Hamburg, all treated by laparotomy, three of which were cured. The first case was one of pregnancy of the left tube. On carefully inserting the hand in the abdomen, with the intention of removing the tumor, the latter ruptured; the ruptured sac was at once pulled up and the genital tract placed as nearly as possible on a level with the abdominal wound, upon which the embryo escaped. The sac was separated from its loose adhesions, the tube surrounded by a double ligature at the uterine end, several firm adhesions of the peritoneum with the colon were also supplied with ligatures, and the whole sac with the ovary beneath it was excised. Bleeding moderate. Abdomen closed with seven deep silver sutures and superficial catgut sutures. Good recovery. In the second case the diagnosis was in doubt between extra-uterine pregnancy and hemato- or hydro-salpinx. On abdominal section a large, partly fluid, partly glutinous, black, bloody mass escaped from abdomen and pelvis. A ruptured tumor of the left tube and ovary, size of fist, was removed; fetus not found. Good recovery. Notwithstanding the absence of a fetus, this was regarded as an extra-uterine fetation. A ruptured tumor without inflammatory symptoms, and the expulsion of a decidua vera several days after operation, were considered sufficient evidence. The third case was one where the diagnosis was doubtful as between an intraligamentary tumor and

extra-uterine gestation. On opening the abdomen a tubal pregnancy the size of a child's head was found between the folds of the broad ligament, where it had ruptured after previous formation of pseudo-membrane. The cavity was cleansed, right tube and ligament removed. Right ovary could not be found. Several membranes and a portion of the sac wall were left behind. Fetus 7 cm. long. Good recovery. The fourth case was one of ruptured intraligamentary, extra-uterine pregnancy, with septicemia. An incision in the abdomen was made, reaching 10 cm. above and below the umbilicus, 5 cm. to the left of the linea alba. Peritoneum loosely adherent to the ovisac. Fetus 44 cm. long, 2,100 gm. in weight; lay transversely free in the abdominal cavity, in newly formed, fine peritoneal coverings; readily removed. The cord entered to the left low down in the ovisac, which formed a tumor the size of a child's head, lying in apposition to enlarged uterus; this with the ovisac was so firmly adherent below to the cecum that removal without great danger of hemorrhage could not be thought of. It was, therefore, determined to tampon the sac (after Freund), and after contraction to remove the placenta. The upper angle of the abdominal wound was closed with two deep sutures, the remainder left open, dusted with salicyl-tannin, and loosely packed with gauze. Slight bleeding. Child died in twenty-four hours; patient died three days later with evidence of sepsis.

The author states that it is proper to operate as soon as possible in cases of extra-uterine pregnancy recognized before the middle of gravidity. After this period, if the condition of the woman permits, we should await events. In the four cases cited conservative measures were inadmissible. L. R.

10. AHLFELD, F.: THE CAUSES OF PLACENTAL RETENTION AFTER THE BIRTH OF MATURE OR NEARLY MATURE EMBRYOS (*Zeitsch. f. Geburts. u. Gynäk.*, xvi., 2).—Thirteen cases are given in which the third period of labor required manual assistance. The character of the retention is either a simple retention, caused by a contraction below the placenta or a portion of it, or it is due to adhesions; both causes frequently operate in the same case. The part at which the contraction or stricture occurs may be at any segment of the uterus, reckoning from the contraction ring to the external os. These strictures all possess the same property of resisting pressure from above, but yielding readily upon dilatation from below. It is possible that the strictures take place because of the irritation of the contractile parts induced before or at the birth of the child. Among the thirteen cases narrated, the application of forceps, especially in a case of eclampsia, may have been the irritant, as well as the violent

exit of the child through an incompletely dilated uterine os, or from the application of hot or cold vaginal douches before the expulsion of the placenta from the uterine segment. The author has demonstrated the latter possibility by experiments upon the absorbing power of the puerperal uterus. A frequent cause in private practice is the irritation of the lower uterine segment and the cervix by improper external manipulations, as in Credé's method of expression, especially in inexperienced hands. Cases of adhesion offering a barrier to the exit of the child are not so infrequent as Credé would have us infer. The author surmises that the placentitis, the inflammation and organic alterations in the decidua which cause the pathological adhesion of the fetal placenta with the maternal decidua, has its reason in a direct migration of inflammatory excitants from the cervix under the deeply situated placenta. This takes place in the latter months of pregnancy. Instead of inflammatory foci, emigrated cellular elements may cause adhesion, as syphilis. In the thirteen cases this occurred twice. Finally, the phenomena accompanying a previous separation predispose to adhesions. What these phenomena are is not known. Of the thirteen cases only four went through a normal, non-febrile puerperium; five had moderate fever, without the lying-in period being lengthened by causes other than greater loss of blood—making nine favorable results. The thirteenth case died of peritonitis; the separation of the placenta was not the cause of death. The absolutely non-febrile cases were those in which simple incarceration of the placenta occurred. In all cases, on the other hand, where the placenta had to be separated, where, therefore, adhesions had existed, there were febrile disturbances during the lying-in period, whether an intra-uterine irrigation had been made after the birth of the placenta or not.

As regards the method of removing the placenta, the author avoids the introduction of the hand, but attempts, by proper traction upon the presenting portion, to pull the placenta into the wider part of the genital tract; this is not infrequently followed by the desired success.

L. R.

11. USPENSKI, W.: FIVE CASES OF TOTAL EXTIRPATION OF THE UTERUS AFTER THE METHOD OF FREUND (*Zeitsch. f. Geburts. u. Gynäk.*, xvi., 2).—The exaggerated hopes from, and the indiscriminate resort to, the operation of Freund in all forms of uterine cancer have served to discredit the operation. Peritonitis, sepsis, and shock occupy conspicuous places among the causes of death. The most painstaking antiseptic precautions are necessary in an operation where the peritoneum is opened in two places. As a matter of fact, the number of

recoveries from Freund's operation have almost doubled in the past six years those which were obtained during the first two years (28.07 per cent to 45.83 per cent). Shock is probably due to the length of the operation, eventration of the intestines, and chilling of the abdominal contents. In the modified operation the dangers from hemorrhage and the mutilation of neighboring organs are reduced to the minimum. After the separation of the vaginal vault and ligation of the uterine artery, as well as drainage of the abdominal cavity, had been followed by such brilliant results, Prof. Snegirew came to the conclusion to operate on several cases of uterine fibroid after the modified Freund method, and the cases are cited by the author. Five cases were thus treated. The first was one of cancer of the corpus uteri. It was at first attempted to extirpate the uterus per vaginam; the vaginal vault was dissected up to the internal os and the uterine artery ligated. Douglas' pouch was thereupon opened and an iodoform tampon pushed into the abdominal cavity to hold the intestines back. Notwithstanding this and the fact that the somewhat narrow vaginal orifice was enlarged by two lateral incisions, it was impossible to bring the uterus further than the introitus vaginae. After the portio vaginalis had been ligated in order to prevent the entrance into the abdomen of carcinomatous detritus, laparotomy was immediately begun. It was then apparent that the corpus uteri was enlarged to the size of an orange. It was pulled through the abdominal wound, the broad ligaments ligated, and the extirpated uterus removed. The abdominal wound was closed with silk sutures, the incisions at the vaginal orifice closed, and the vagina tamponed with iodoform gauze. Entire recovery.

The second case was one of interstitial fibroma of the uterus. The vagina was separated from the cervix, the uterine arteries tied, and the pouch of Douglas opened. After opening the abdomen the uterus was drawn forward, the tubes and ovarian ligaments of both sides ligated, the round ligaments tied and cut through, and the anterior vaginal vault was dissected and sutured to the posterior vault. After extirpation a drainage tube was inserted in the peritoneal cavity and the lower end made to project through the vagina. The abdominal wound was then closed. Operation lasted two hours and a half. Moderate bleeding. Patient died three days afterwards from increasing shock and hemorrhage. Post-mortem examination showed no evidences of sepsis, but thrombosis of the longitudinal sinus and meningeal hemorrhages were found.

The third patient complained of violent pains in the abdomen, in the loins and thighs. Profuse, blood-colored, stinking, acrid discharge; bleeding constant for the past two

months; copious and painful micturition; urine normal; bowels inactive; dry râles in the lungs; heart and digestive organs normal. The finger easily entered the cervical canal, and, immediately behind the internal os, came in contact with a soft, brittle growth, which showed, microscopically, a sarcoma. The uterine arteries were tied and the posterior vaginal vault opened. The vagina was tamponed and extirpation made per laparotomy, the vagina being too narrow. The uterus was adherent to the small intestines in two places. After careful separation with the finger, ligation and severing of the tubes and broad ligaments followed. A portion of the adherent gut was infiltrated with small knots, and about seven centimetres were resected. The mesenteric borders were sutured with catgut and those of the gut with fine silk. The abdomen was then closed. Operation lasted two hours and ten minutes. Patient died on second day, of general anemia. The fourth case, one affected by carcinoma, was treated in the same manner, and made a good recovery.

The fifth case was one of carcinoma of the uterus with interstitial fibroma of the uterus and right intraligamentous tissue. After the usual vaginal procedures the abdomen was opened, extirpation completed, and the abdominal cavity irrigated with a one-per-cent borax solution, wounds closed, and an iodoform tampon placed in vagina. Good recovery.

L. R.

12. ECKARDT, C. TH.: ON ENDOTHELIAL TUMORS OF THE OVARIES (*Zeitsch. f. Geburts. u. Gynäk.*, xvi., 2).—Following a suggestion of Ackermann, the author classifies all neoplasms originating in endothelium, albeit springing from the most varying sources, as endotheliomata. He narrates a case of his own, with a description of the growth removed. The patient had a tumor the size of a man's head, apparently coming from the left ovary; it was solid and movable; uterus enlarged to the third month of pregnancy. The tumor as well as right ovary was removed, but patient died on the fourth day with continual vomiting and symptoms of collapse. Post-mortem examination showed the intestines greatly distended, the serosa moderately injected but free from peritonitic exudate. The entire pouch of Douglas was filled with a partly clotted, partly fluid mass of blood; kidneys small, flabby, anemic; fatty degeneration of the epithelium; heart very flabby, in advanced stage of brown atrophy. Cause of death obscure. The extirpated tumor was of a generally ellipsoid form. It weighed 4,200 gm. Its surface in many places was covered with flat nodules; tortuous vessels traversed the surface of the tumor in every direction. In two situations, almost diametrically opposite, there were two larger nodules, one about

the size of a small apple, which on section showed typical dermoids; the internal surface of the wall showed numerous small, macroscopically visible cysts with watery contents, lime deposits, and a well-developed tooth. This tumor was separated from the main growth by a layer of loose connective tissue about two or three millimetres thick; the other consisted on section of an opaque, grayish-yellow mass of the consistence of brain matter. Section through the entire tumor showed an ellipse the long diameter of which measured about 24 cm., the short about 20 cm. The main mass consisted of tissue containing a number of smaller and larger cystic cavities. These were most numerous near the periphery, and partly contained dark fluid blood. In many places on the periphery there were areas of a grayish-yellow tissue averaging 4 to 5 cm. in width, which were especially well developed on the side of the before-mentioned two large nodules, separated from them by a fine septum of loose connective tissue; in parts it was the seat of foci of hemorrhagic softening. Microscopically the tumor showed a greatly developed capsule of connective tissue, here and there infiltrated by cells with numerous widely dilated vessels. The growth was sharply defined from the capsule; only occasionally did offshoots penetrate it. The main mass consisted of closely aggregated cell conglomerations, occasionally decidedly tubular, then more oval or spheroid, varying in size and lying closely together. Generally they were separated by an extremely delicate connective tissue; occasionally it became very thick, and here and there a capillary loop formed the only border, the cells then pressing closely upon the vascular endothelium. In some places, notably in the centre, the arrangement of the individual cell aggregation was more regular, presenting the appearance of glandular tubules, but showing no lumen either upon cross or longitudinal section. The nuclei always lay one next the other in regular array, separated by a small quantity of protoplasm. In other situations the entire field was occupied by blood partly well preserved, partly transformed into fibrin, and containing the cellular elements of the growth in little heaps or rows; in such regions there were greatly dilated and engorged vessels, resembling capillaries. The centre of the tumor presented a different aspect. Here cells were found, resembling the above, which formed a kind of network, in the meshes of which blood partly coagulated, partly fluid existed. The meshes showed the most diverse forms and transitions. In a few of these formations, undoubtedly originating from vessels, a more or less distinct endothelium was observable. The great majority of these cavities were bordered by a layer of cells of varying thickness.

The ovary of the right side was also the seat of a high

grade of pathological alterations; it was filled by an innumerable number of small, more or less distinct nodules, and believed by the author to be the site of the beginning and developmental phases of the neoplasm. In almost every section were cell tubes, very rich in nuclei, anastomosing with one another; cross-sections of capillaries could be seen within them; blood was here and there noticeable between the cells. Numerous globular spaces about the size of a corpus luteum were noted, filled with cell aggregations and blood. . . . The various changes found justified the author in characterizing the neoplasm as a typical angiosarcoma. New growths exist in the ovary, undoubtedly originating in the endothelium, which bear a remarkable resemblance in structure to sarcomata. The author has observed two varieties of endothelioma in the human ovary—(1) endothelioma intravasculare, a growth which, originating in the endothelium of the vessels, develops within the latter; and (2) endothelioma lymphaticum, a growth which, originating in the endothelium of the lymphatic, develops within the lymph spaces and larger lymphatic vessels.

L. R.

13. EBERTH AND KALTENBACH: ON THE PATHOLOGY OF THE TUBES; PAPILLOMATA; THE PATHOGENESIS OF RUPTURE OF THE TUBES IN EXTRA-UTERINE PREGNATION; THE ETIOLOGY OF PYO-SALPINX (*Zeitschr. f. Geburtsh. u. Gynäk.*, xvi., 2).—Mrs. H., æt. 50, married at 22; sterile. Menstruation at first regular, profuse, lasting eight days; since twenty-fourth year, pains before onset; menopause since six months. For four years has suffered from a constant dribbling of a yellowish, watery fluid, occasionally mixed with blood. May, 1888, violent pains in right sacro-iliac region, with great bearing down; pains radiate toward stomach and into lower extremities. Sudden movements are painful; also on walking. Great debility and insomnia. Examined in July, 1888, with following result: Portio vaginalis normal for nulliparæ; uterus ante flexed, greatly thickened; on its left side, at the height of the angle of flexion, a fibromyoma about size of walnut. From the left fundal angle a somewhat twisted cord, about as thick as the little finger, existed, continuing laterally into a tumor about as large as a plum, somewhat anteriorly, tense, elastic, and smooth; to the right, and posteriorly to uterus, a tumor the size of a fist, tense and elastic, terminating toward uterus in a pointed end, and dilating sac-like externally and posteriorly. Diagnosis, bilateral hydro- and pyo-salpinx. Operation: The large right-sided tumor was readily removed without injury, and it and the ovary ligated from uterus and broad ligament. Left tumor had to be pushed upward through vagina, but tore on separating adhesions, emitting several drops of brownish-red

fluid and a light-red, marrow-like substance. Patient made slow recovery. It must remain undetermined if the sterility and menorrhagia from which this woman suffered were due to the small myoma situated at the left border of the uterus, or to a disease of the mucous membrane of the uterus or tubes. The fact that the yellowish, watery discharge which had existed for four years ceased after the operation indicates that it either came directly from the tubes or that an irritant within them caused the secretion of an abnormal element from the uterine mucosa. Macroscopically, the left tube was pervious to a fine sound at uterine end; from here on it became gradually the thickness of a thumb; wall thickened throughout; it was filled with masses pushing toward the dilated cavity in the form of papillary proliferations. The new formation had in part implicated the muscular wall. The large right-sided sac had also almost completely solid contents of the same papillary character, penetrating the wall in places and emerging as subperitoneal nodules. The surface of the sac was deeply injected and traversed by dilated vessels. Microscopically, the mucous membrane had a velvety appearance in places, from which shorter and longer fine villi sprang, presenting the appearance of a cauliflower-like neoplasm. On section, the epithelium was in a single layer, composed of cuboid, short, cylindrical cells, with no distinct ciliæ. This epithelial layer was frequently interrupted by patches of thickening, beneath which the level of the mucosa was undisturbed. There could be no question that the epithelial proliferation was a primary, and the elevation of the connective-tissue matrix into papillæ a secondary process.

Rupture of the Tubes in Extra-uterine Pregnancy.—Mrs. G., æt. 30, was admitted in June, 1888, for severe internal bleeding. Had had five children in rapid succession, and then remained sterile for five years. Last menstruation in May; since then signs of pregnancy. In June she was suddenly seized with pains in abdomen, syncope, vertigo, and vomiting while seated at table. Patient was extremely anemic, with almost imperceptible pulse and great prostration. Diagnosis, rupture of tubal pregnancy. Operation: On opening abdomen, fluid and coagulated blood masses escaped in great abundance. On inserting hand in small pelvis, to the left of uterus a solid coagulum the size of a man's fist was found, the nucleus of which was the ruptured left tube, with a six weeks' fetus presenting through the rupture. The abdominal and pelvic cavities were carefully cleansed and a compression bandage put on. Patient at first rallied, but died thirty-six hours afterward of collapse. Post-mortem examination revealed that she had suffered from secondary hemorrhage. The bleeding did not come from the stump, as

the ligatures were firm and intact ; but in the right half of the pelvis, on the posterior wall of the uterus, as well as the lateral borders of the Douglas, were floating vascular pseudo-membranes, small vessels opening on their borders. They were undoubtedly already torn before operation, for the ruptured tube lay absolutely free in the midst of a blood coagulum ; the membranes probably were adherent to the tube prior to rupture, and it was also very likely that the pregnant tube had been held in apposition to the posterior uterine wall by the pseudo-membranes, as was the case in the right, non-pregnant tube and ovary. The case teaches that besides the tear in the tubal wall we must look for other sources of hemorrhage which are not controlled by the ligation and removal of the ruptured tube. The usual causes assigned for rupture of the tube will not do for all cases. The simple stretching of the tubal wall by the growing ovum will by no means suffice ; neither will the oft-spoken-of contractions of the tubal wall, expressed by violent colics. They might do much harm, but, on the other hand, labor-like contractions are an evidence that the muscular coat has undergone eccentric hypertrophy ; tubal pregnancy often is protracted, and even completed, despite these contractions. In many cases the abnormal tenuity and brittleness of the tube wall may be the cause. Acquired inflammatory alterations, hemorrhages, circumscribed connective tissue and callous formations, may also cause brittleness of the wall. Despite all these, however, observations remain which cannot be classified under these various heads, among which are the very premature ruptures, in which there could be no stretching of the tube wall, and in which no contractions occurred. The case narrated is one of these. In this a totally different explanation—namely, a tearing of the sac by the pseudo-membranous strands adhering to it—is given by the author. The operator in such laparatomies should carefully search the abdominal cavity for sources of hemorrhage. Vascular floating membranes should be ligated and exposed adhesion surface sutured over.

The Etiology of Pyo-Salpinx.—It is readily to be understood that infectious diseases of the tubes should be very rare in the virgin ; it therefore is important to discover the cause of disease in purulent salpingitis in the virgin. M. L., 18 years old, virgin, has menstruated regularly since sixteenth year without suffering. At the end of 1887 pains on the right side of abdomen ensued after a fall down-stairs, disappearing on rest in bed. In May, 1888, during menstruation, she suddenly was seized with fever, pain in right side, and symptoms of peritoneal irritation ; in bed fourteen days, since which time has not been free from pain ; menstruates every fourteen days, lasting eight days, and accompanied by crampy pains in right side ; occa-

sionally gets chilled toward night; is very emaciated. On admission, October, 1888, there was a tumor the size of a fist to the right of the uterus, reaching to the linea terminales, and fluctuating through the vagina. On its upper abdominal border there was friction, as in adhesive peritonitis. Diagnosis withheld; patient treated symptomatically, and discharged improved on fourteenth day. Returned in December; tumor more defined, spindle shape, tensely elastic; pains and other symptoms exaggerated. It was determined to open the sac; extirpation was not considered feasible. Abdomen opened by a 5-cm. incision along Poupart's ligament. Mesentery and gut were adherent above and at side to the tumor. The finger could feel that the tumor was intraligamentary. The sac was sutured to the abdominal wound and plugged with iodoform gauze. Ten days later the surface of the sac was found adherent to the abdominal wall, but the entire wound was drawn funnel-shaped inward. Despite pressure through vagina, only a small portion of the extraperitoneal surface of the tumor could be made free; the sac was then punctured, and a mass of thick fluid pus escaped, possessing a foul stench. Microscopically this was found to consist of pus cells, cocci, diplococci, and streptococci.

L. R.

14. SPERLING: HERNIA OF THE GRAVID UTERUS (*Arch. f. Gyn.*, xxxvii., 2).—The patient was thirty years old, of slight build. The hernial protrusion fell over and covered the genitalia; it was covered by very thin abdominal integument, and the uterine contractions, blood vessels, etc., could be plainly seen. The membrane was ruptured and cervix permeable to the size of a lead pencil. The woman was delivered of a living child after three days, labor in the seventh month. Puerperium normal. Child was 35 cm. long, weighed 979 gm. It was wrapped in cotton batting and placed in a Cr  de incubator. It was fed with the mother's milk by a spoon; died twenty hours afterwards.

Cesarean section had been performed upon this patient in a previous labor. The character of the operation could not be determined.

L. R.

15. HERTZSCH: SEVEN ADDITIONAL CONTRIBUTIONS TO CONSERVATIVE CESAREAN SECTION (*Arch. f. Gyn.*, xxxvii., 1).—The hands of the operator were in all cases immersed in 1:1,000 solution of corrosive sublimate in place of the carbolic solution; the silk used for suturing was taken from boiling water and cooled off in a 3-per-cent carbolic solution before using; catgut was immersed in a 1:500 solution of bichloride for forty-eight hours, then in oil of juniper for fourteen days, and finally preserved in alcohol.

CASE I.—Factory hand, age 25; rachitic; admitted to ward at 7 P.M., pains having begun at 3 in the afternoon; they were very acute, but not particularly powerful. Examination showed patient to be a primipara in the tenth month of pregnancy, with a generally contracted pelvis; os patulous for two fingers; bag intact, scalp tumor presenting. Awaited thorough dilatation of the os. As it had made no progress by 10 o'clock next day, the woman much exhausted and the urine showing albumin, Cesarean section was resorted to by Prof. Zweifel; child, female, which cried lustily, weighed 2,650 gm., and was 49 cm. long. The incision was made laterally in the fundus uteri; silk was used in making the deep sutures, catgut for the superficial. The former consisted of button sutures through the entire thickness of the uterine wall, including the decidua. The peritoneal wound was united by a continuous suture beginning below, which was not, as formerly, carefully confined only to the serous flaps, but also included the muscular layer beneath. On closing the abdomen the parietal peritoneum was first sutured with a continuous silk suture, and then the abdominal wall brought together extraperitoneally. The puerperium was disturbed from the 17th to the 25th day by an herpetic fever. Good recovery.

CASE II.—Mechanic's wife; had been delivered four times by means of perforation, once by artificial labor, once by forceps, and in June, 1887, by Cesarean section. In December, 1888, she again entered the clinic pregnant, with the statement that the waters had escaped for two hours. She had a generally contracted, flattened pelvis of the second degree; the gravid uterus was protruded through the hernial opening which had formed in the old abdominal cicatrix, and hung down between the thighs of the woman. Cesarean section was performed with the consent of the patient, the operation lasting thirty-eight minutes. A male child, weighing 2,900 gm. and measuring 50 cm., was removed; it was asphyxiated, but revived by Schutze's method in nine minutes. The abdominal incision was made through the old cicatrix by a free cut through the entire thickness, without the necessity of tying spurting arteries. The mesentery was adherent to the uterus, and both to the abdominal wall, and were detached by the finger; the uterus was directly adherent by its lower segment—the portion not covered by mesentery; the old cicatrix in the uterus was very indistinct and very firm; the union had been thorough, leaving only a small diminution in the thickness of the wall at one place; the decidua was normal. The incision through the uterus was through the fundus only. Before the incision an elastic ligature had been lightly placed around uterus at the level of the internal os. On removal of the child and placenta it was evident that tighter

application of the ligature would have been unnecessary; silk was used for the seven deep sutures, going through the entire thickness of the uterine wall and including the decidua. The superficial suture consisted of continuous catgut, as in the preceding case. After controlling a few bleeding points, overcoming uterine atony by ergot, massage, and hot creolin irrigation of the vagina, at the desire of the patient and consent of the husband sterility was induced by tying the Fallopian tubes with silk. Great meteorism during the first two days of the puerperium. On the tenth day gangrene supervened in the middle and lower portions of the wound, accompanied by moderate fever. Patient made a good recovery.

CASE III.—Factory hand, 26 years old; entered the wards in December, 1888, in the first stage of labor. She was a primipara, with unsymmetrical, generally contracted, rachitic, flattened pelvis of the third grade. Child weighed 3,750 gm. and was 51 cm. long. It was removed with much difficulty. Several coils of intestines protruded on bringing up the uterus, and caused some difficulty. The sutures in the uterus were as in the previous cases, except that catgut was used instead of silk. The peritoneum was treated as in the other cases. The injection of three syringefuls of ergotin before the operation proved very efficacious, the uterus remaining well contracted throughout. Good recovery.

CASE IV.—Mechanic's wife, 25 years old, with no signs of rickets, generally contracted pelvis; primipara; had been delivered spontaneously of a child weighing 1,800 gm. three years previously. It was first expected that the labor would terminate spontaneously, but after twenty-four hours the pains ceased. Version was attempted, but desisted from. Tarnier's forceps was then applied, but without success, and finally Cesarean section was performed, the operation lasting a little over half an hour. The child weighed 3,200 gm. and was 50 cm. long. It cried lustily upon birth. The incisions and sutures were the same as in the other cases. The injections of ergotin having been postponed until the beginning of the incision, atony of the uterus occurred while suturing, which caused considerable trouble. Normal puerperium; good recovery.

CASE V.—Domestic, 23 years old; entered in January, 1889, in the first stage of labor; primipara, with generally contracted, flattened pelvis. In this case the expectant plan was also tried; but, as the pains ceased, Cesarean section was made. The intestines prolapsed during the operation, and were with difficulty replaced because of the tension of the abdominal walls, the woman being insufficiently anesthetized. The puerperium was disturbed by a catarrhal pneumonia,

caused by the decomposition of chloroform by illuminating gas. Good recovery.

CASE VI.—Workingwoman, age 26 years; had had two previous deliveries by perforation; multipara, with generally contracted, flattened, rachitic pelvis of the second grade. The operation, which lasted thirty minutes, was similar to that in the other cases; but the parietal peritoneum was united by a continuous catgut suture, and, as in other cases where this had been done, suppuration of the abdominal wound took place. Good recovery.

CASE VII.—Domestic, 29 years old, primipara, with generally contracted, flattened, rachitic pelvis. The incision was made off from the fundus, and the abdominal wound temporarily closed behind the exposed uterus by a Muzeaux forceps. Catgut was used for all sutures. In this case it was attempted to prevent the adhesion of the uterus to the abdominal wall by inserting a separating membrane between the organ and the abdominal wound. A strip of fish-bladder condom, 4 cm. in width, after first being boiled and then immersed in a 1:1,000 sublimate solution, was fastened by its corners by four fine sutures; notwithstanding, before patient was discharged, the uterus was found to have become agglutinated to the abdomen by its fundus. The child flourished.

In all these cases it had been the endeavor of the operator to prevent adhesions from forming between the uterus and abdominal wound. For this purpose in Case II. the uterus was opened at its top only, making the incision lie above and behind, the small anterior portion being covered by mesentery. In this way the wounded surface of the uterus and that of the abdominal wall did not come in contact; but this incision made the delivery of the child and placenta and cleansing of the interior exceedingly difficult, and it should be rejected, not only for this reason, but because the adhesions which it might cause with the intestines could readily lead to serious harm; besides this, the sutures entering at the convexity and emerging at the concavity of the wall of the organ, the inner ones will be in close apposition, while wide gaps will exist between the external stitches.

In Case III., on the contrary, the incision was made low down in the uterus and as small as possible. The procedure here also failed, for the uterus was adherent on the discharge of the patient; and the liberation of the child was even more difficult than in the preceding case, the incision having to be enlarged downward, bringing the wound in close apposition with the bladder. It was then concluded to try Döderlein's procedure of applying iodoform-collodion over the uterine wound; but in Case IV., where this was done, the uterus was

again found united to the abdominal wound, and the same result followed in Case V. In the sixth and seventh cases it was thought possible to prevent adhesions by suturing the parietal peritoneum separately and uniting the abdominal wound extraperitoneally, but this also failed.

It has been urged that the agglutination of the uterus to the abdomen causes no trouble and in time becomes separated. It does not cause any trouble in the non-pregnant state, but the gravid uterus after Cesarean section has been found to cause such a pendulous condition of the abdomen that the fundus rested between the patient's thighs; in case of a secondary Cesarean section the adhesions cause much difficulty in the technique and lead to serious prolongation of the operation. It was found, too, in cases of secondary operations, that the adhesions showed no signs of solution, but were very firm.

L. R.

16. LOMER: OVARIAN TUMORS IMPACTED IN THE SMALL PELVIS AS OBSTACLES TO DELIVERY (*Deutsche Med. Wochenschr.*, June 12th).—Mrs. S., 21 years old, had a year previously been spontaneously delivered of a dead, immature fetus, and had since then suffered from pains in the right side. Again pregnant, on April 10th, 1888, she was taken with pains. After the midwife had observed the non-success of the pains for four days, she called in a physician, who, because of the excessive sensitiveness of the patient, examined her under anesthesia and diagnosticated contracted pelvis; the os, dilated about the size of a dollar, was situated exceedingly high up, almost beyond the reach of the finger; the head rested upon the right iliac bone; the cord prolapsed; the heart sounds were good; uterus stretched almost as thin as paper; bag of waters intact. Fearful of uterine rupture, he punctured the bag and made an unsuccessful attempt to draw down a foot; the cord then descended and the child died. On the evening of the 15th he determined to attempt version and extraction. The os was dilated, but as high up as formerly. The shoulder and hand presented. With great difficulty he succeeded in grasping a foot and delivered the child up to the umbilicus; freeing the arms, which had to be done high up above the pelvic inlet, was very difficult. But the immature fetus, already beginning to decompose, was so soft that the trunk tore off and the head remained within the uterus. The patient, who had up to then had a good pulse, collapsed and complained of excruciating pain. The author was then called, who found the patient moribund. She died several minutes later.

On post-mortem examination, an ovarian tumor, larger than a child's head, surrounded by fresh blood, deeply impacted in

the small pelvis, and adherent all about, was found. The uterus was not ruptured, though greatly stretched, and contained the child's head in advanced decomposition. There was no fluid in the abdomen. Cause of death obscure: probably intoxication from ptomaines caused by the retained head.

The author contends that the most experienced obstetrician is liable to be deceived in such cases, and mistake the mass which narrows the pelvis for the pelvic wall. The severing of the trunk from the head was also, under the circumstances, an accident which could happen to any one. But examination per rectum suffices to make everything clear. One can then feel that the obstacle to delivery is not the pelvic wall, but that it lies between the rectum and vagina. Impaction of an ovarian tumor in the small pelvis during labor is not so very rare. The best treatment, counsels the author, is to attempt carefully to repose the growth. If this should fail, the tumor, no matter how hard it feels, should be punctured, at best through the posterior vaginal vault. If puncture likewise fails, in many cases it will be in order to make a bold incision and remove the possibly colloid or dermoid contents. If the tumor is adherent in the cul-de-sac of Douglas, such a procedure is devoid of danger as regards the contents reaching the peritoneal cavity. It has happened that the distended posterior vaginal vault ruptured from the pressure of the impacted tumor, and the latter was spontaneously expelled.

L. R.

17. FRANTZEN, A.: A RARE CASE OF SUBLIMATE POISONING AFTER UTERINE IRRIGATION (*St. Petersburger Med. Woch.*, June 16th).—The patient, 24 years old, had been delivered May 15th; some portions of the membrane had been retained, and came away with the foul lochia several days later. On the twelfth day she came under the author's treatment, who diagnosed septie endometritis and irrigated the uterus with sublimate solution (1:3,500), which brought away brownish and white flakes and a piece of membrane. Patient had a chill two hours afterwards, followed by fever and vomiting. At noon she had a normal evacuation from the bowels; at 1 P.M. again vomiting; at 3 P.M. thin passage, accompanied by violent colicky pains, followed by vomiting. Temperature then was 38.5 C., pulse 110; at 8 P.M. it was 37.4, pulse 100. During the night she had ten diarrheal passages with great colic, and vomited as often. On the fourteenth day the abdomen was sensitive to pressure, especially in the ileo-cecal region and the descending colon, but was not enlarged; uterus sensitive, lochia serous, odorless, and sparse. Temperature at 9 P.M., 37.7; pulse 94, small. Bismuth was given for the diarrhea, together with port wine,

cold milk with lime water, and ice pills and morphine for the vomiting. By 8 P.M. there had been four passages and four times vomiting, upon which fifteen drops of tinct. opii were given per rectum. Evening temperature 37.5° , pulse 84. During the night she had six more stools, and vomited as many times. Next day patient was much better, but complained of increased salivation; another day later she suffered from pains in pharynx and gums; the pharynx was reddened, the tonsils swollen and coated with a white film. On the seventeenth day post partum the patient was much improved, the vomiting having ceased entirely. She had been rinsing the mouth with a solution of one teaspoonful of potassium chlorate to the glass of water. Lungs were clear, tonsils swollen, and coating diminished; had pain in swallowing, and complained of occluded nose; gums bled in several places; uterus tender. The gums were touched with silver nitrate, the nose rinsed with solution of potassium chlorate. Had four stools during the day, in one of which there was a piece of bloody mucus. On June 1st, the eighteenth day, the tonsils were clear, there was no more salivation, no bleeding from gums; abdomen somewhat enlarged; temperature 37.3° , pulse 80; respiratory murmur somewhat accentuated; during the day vomited three times, followed by four passages with moderate amount of sero-sanguinolent lochia. Toward evening she was said to have suddenly expectorated a quantity of sero-sanguinolent sputum, after which she felt somewhat relieved. During the night she rapidly failed, and died with symptoms of collapse on the morning of June 2d. Post-mortem examination was refused.

L. R.

18. METZGER, J.: A CASE OF EXTIRPATION OF THE SPLEEN FOR HYPERTROPHIC WANDERING SPLEEN (*Zeitsch. f. Geburts. u. Gynäk.*, xix., 1).—Mrs. H., 35 years old, had had seven normal spontaneous labors; last labor eleven weeks previously; menses irregular, sparse, often postponed for a week, had last appeared fourteen days before. General history negative. Has had pains in the right side of abdomen since last pregnancy, radiating to the spine; upright locomotion was impossible on account of the pains. Labor did not dissipate the pains. On admission patient was emaciated and anemic; preserved a bending forward posture; locomotion heavy and uncertain; no edema, no glandular swellings; abdomen enlarged on right side by a hard, slightly movable tumor; flattened percussion note on the right side, tympanitic to the left; the tumor, about the size of a child's head, rested with its upper border about a hand's breadth below the umbilicus, reached on the left to the linea alba, to the right to the pelvic wall; introitus and vagina wide, cervix deflected forward and to the left; corpus

uteri retroverted to the left; uterus was $8\frac{1}{2}$ cm. long; left attachments free; the right half of the pelvis was filled by a tumor which pressed the right and posterior vault to one side, and which could not be pushed out of the pelvis; it was in intimate connection with the tumor palpated from the exterior; the right ovary was attached to the right pelvic wall; liver in normal place, clearly defined from the tumor; percussion in the region of the spleen gave distinct flatness; spleen not to be felt. Diagnosis somewhat doubtful. Patient treated tentatively, but, as she suffered greatly from pressure and pain, it was decided to do an exploratory incision, which was made by Prof. Löhlein on June 20th, 1889. On opening the abdomen the tumor was found to be an hypertrophied spleen; it was slightly adherent to the right anterior and lateral abdominal walls by fine pseudo-membranes, readily separated; the lower end of the tumor was tightly wedged in the right half of the pelvis; the hilum of the spleen was posteriorly, from which a flat pedicle, widening greatly above, came off and was attached in the splenic region proper; it was here a mass of tissue almost as broad as a hand, consisting of the histological elements of the various ligaments, but greatly thickened by connective-tissue bands and membranes; it contained the splenic artery, about the size of a pencil, and its likewise enlarged vein. This large mass had evidently caused the dulness and simulated the normal position of the spleen. The pedicle was tied by two silk ligatures at about the middle, and the tumor removed, upon which considerable blood escaped from the growth, so that its volume contracted to about half. The stump was sutured with several catgut sutures to prevent secondary hemorrhage; the abdomen was then closed.

The author thinks that the recently preceding gravidity caused the fixed position of the tumor on the right side. It is possible that the wandering organ had been pushed there by the growth of the gravid uterus, and formed attachment to the surroundings; the mutual compression of tumor and uterus caused mild inflammatory adhesions to form, to be strengthened during the puerperium. There was not the slightest trace of leukemia found upon patient, who made a good recovery, but developed struma after the operation. Moderate exophthalmus developed four weeks after the operation, which persisted; the patient, however, was very much improved while under observation, gaining greatly in weight and strength, but died four months afterwards of pulmonary tuberculosis, much to the surprise of the author. There had been no objective symptoms in the lungs at the time of admission and operation.

L. R.

19. SUTUGIN, W.: THE OPERATIVE TREATMENT OF UTERINE CANCER DURING PREGNANCY AND LABOR (*Zeitschr. f. Geburts. u. Gynäk.*, xix., 1).—Of nine thousand labors which occurred in Moscow, the author found this complication in but two cases. The first case was a soldier's wife, 32 years old; had had eight normal labors; pregnant since May, 1888. Since March of that year she suffered from vaginal discharge, which disseminated a putrid odor during the last two months. Since October of that year she began to emaciate, and later on complained of pains in the groins and spine. In February she came under S.'s care. He diagnosticated cancer of the portio vaginalis, with cancerous infiltration of the lateral and posterior vault and the uterine ligaments; pregnancy in the tenth month. On the 10th, labor began and water escaped; pelvis roomy, pains normal. The infiltrated os scarcely permitted the passage of two fingers; the vault was filled with nodulated masses. Porro's operation was done under very strict antisepsis, and a living child was successfully extracted. Good union ensued, but patient died, with symptoms of increasing marasmus, forty-two days after the operation. Child survived. The second case presented the same pathological accompaniment to pregnancy. She was 30 years old and in poor health. On the day of labor she entered the hospital, and the Porro-Müller operation was performed. An asphyxiated female was extracted, which revived in five minutes. Mother had a feverish puerperium; diarrhea set in on the fourth day, and patient succumbed eight days after the operation. Post-mortem showed generalized peritonitis with fibrinous exudates; the uterus was perforated by breaking-down of the cancerous tissue in the fundus.

L. R.

20. ROTH, O.: RECENT PROGRESS IN PRACTICAL OBSTETRICS (*Der Frauenarzt*, v., 6).—The author begins with reviewing the success following antisepsis by corrosive sublimate. In his own hands he has had none but gratifying results from the use of this agent; he has never seen a case of intoxication follow its employment. He feels confident that the use of this agent may be supplanted by less heroic measures in hospitals and clinics, but not in private practice; here we do not see the patient generally until the hour of delivery, when labor has often lasted for some time and the genitals have been manipulated by midwife or other attendant; we have no control over the hygienic surroundings of a great many of the patients. He used a solution of 1:1,000; he used it in 204 cases, which comprised, however, only cases of operative obstetrics. The external genitals and surroundings were first washed with soap-water as warm as possible, then rubbed with about a pint of sublimate solution, and the vagina irrigated with the

same. Of these 204 cases, 5 died. The contra-indications to the use of bichloride are, according to Kehrer: 1, antecedent symptoms of mercurialization; 2, acute anemia; 3, renal affections; 4, intestinal catarrh; 5, large vaginal, perineal, or cervical lacerations; 6, atony of the uterus. The author says we may safely discard the last two, and employ the agent with impunity.

R. has made use of tamponnade of the uterus (with iodoform gauze) in six cases; in four there was atony of the uterus. The tampon readily controlled hemorrhage. He employed gauze containing 50 per cent iodoform; he introduced it without instruments, fixing the uterus externally with the left hand and pushing the gauze up with the right. He allowed it to remain *in situ* until the uterine contractions forced it into the vagina, or sometimes externally; this occurs from the fourth to the sixth day. The tampon removed after-pains, or greatly mitigated their violence.

The author considers the introduction of axis traction forceps as an important step forward in obstetrical art. In cases of high position of the head the extraction is simplified and its duration lessened by the use of Tarnier's forceps.

Concerning the continuous catgut suturing of ruptured perineum, at first introduced by Schröder, the author has had only the most satisfactory results, good union following in every case where it was employed; he used juniper-oil catgut. He also considers the practice of incising the cervix in case of deficient dilatation, and believes that this procedure, together with the application of Tarnier's forceps, is capable of saving many infantile lives.

L. R.

21. SCHRADER, W.: ON THE PATHOGENESIS OF PLACENTA PREVIA (*Zeitsch. f. Geburts. u. Gynäk.*, xix., 1).—The author believes, since he has read Kaltenbach's article with the same title, that in two cases of placenta previa which he observed clinically in 1888 the placenta developed within the decidua reflexa of the inferior pole of the ovum, and that there was a non-union of the presenting placental portion with the decidua vera. He surmises that the reflexa is always more or less associated in the development of even the normal placenta; as a necessary sequel, the reflexa and vera must become united in normal manner in the further progress of gravidity and in the absence of abortion. The two cases of the author occurred in the same woman. When she was first admitted for bleeding from the pregnant uterus, the examination revealed the following: Temperature per vaginam, 37.5° C.; the fundus uteri was at the umbilicus; there was copious bloody discharge; the finger, on passing the internal os, did not at once impinge upon the fetal parts, but passed into a large funnel-

shaped cavity, empty except for the presence of blood clots; its upper margin was bridged over by the placenta; the cavity was five or six centimetres in length. The following night a fetus of about the seventeenth or eighteenth week was expelled. In November of the same year she was again admitted, pregnant, and with hemorrhages. Temperature per axillam, 38.4° ; the fundus uteri was a finger's breadth above the umbilicus; internal examination revealed precisely the same funnel-shaped cavity beyond the internal os, covered by placenta, which was present on the previous occasion; she had a heightened temperature, moderate bleeding; because of the fever and the apparent impossibility of staving off labor until maturity of the ovum, it was decided to strengthen the very slow and weak pains by douches; after nine had been made, a dead fetus about twenty-one to twenty-two weeks old was delivered, with moderate hemorrhage. The placenta had to be manually extracted one hour post partum.

The author considers that in these two cases of placenta previa there was unquestionably a lack of union between the reflexa (and the placenta developed therein) of the lower pole of the ovum with its corresponding decidua vera, and not a separation of the placenta from uterine contractions. The funnel-shaped cavity existing during both pregnancies can be explained upon no other ground than that at least half of the placenta no longer was in contact with the uterine wall. The fetus was in both cases alive up to a few hours preceding delivery. Had the placenta been separated by uterine contractions, the fetus could not have lived so long. The patency of the cervical canal up to the internal os was due to deep lacerations in the cervix. It is extremely probable that union between the reflexa and vera would not have taken place in these cases, even if the pregnancy had been prolonged to full term; the author explains the absence of union in a certain rigidity of the lower uterine segment and its consequent diminished capacity to change from the spheroidal to the globular form.

L. R.

22. ENGELMANN, F.: NINE CASES OF UTERINE MYOMATA TREATED BY APOSTOLI'S METHOD (*Deutsch. Med. Wochen.*, July 3d).—These cases were taken unselected from a number which regularly visited Kreuznach for its curative regimen, and included patients rather well situated in life, and in whom a host of other procedures had been tried with varying success. The treatment in all cases was adopted only at the suggestion of the patients, who had heard of Apostoli's method and results. From the result of his experience with this treatment, E. makes the following conclusions: 1. Involution of the growth, evidenced by diminution in its bulk, could

only be positively demonstrated in isolated cases, and was not considerable. 2. The principal effect of the electrical treatment was upon the diseased mucous membrane; it was in all cases brought to a nearly normal state, and the symptoms induced by it—bleeding, fluor albus—favorably influenced or entirely removed. 3. Favorable effect upon the symptoms of compression could always be obtained, as well as improvement in nervous symptoms. 4. The treatment, as a whole, does not accomplish more than methods heretofore in vogue; but it should still be regarded as a valuable adjunct to our armamentarium against uterine myomata.

The apparatus used by the author was a 24-cell portable modified Leclanché battery, which Apostoli had highly recommended to him. In all his manœuvres he had followed exactly in the wake of the Parisian master. Much valuable aid was derived from a galvanometer graded to 250 milliamperes. He considers a rheostat superfluous. The external clay electrode as recommended by Apostoli was found the most serviceable, after using all the modifications vaunted by various authorities. The patients all said that they experienced the least pain from the clay electrode. He used only platinum needles for electro-puncture, in no case steel ones. The latter are cheaper and sharper, but cannot be used when the anode is to be brought into action. Needle and sound should always be introduced without a speculum, to gain the certainty afforded by the controlling finger. The author was surprised by statements that currents of 200 and 250 milliamperes could be safely used. In most cases he could not go over 150 or 160 milliamperes, frequently not so high. He was not able to note a diminution in the pulse rate during the sittings. The most frequent symptoms next to pain—which was never very great—was a not unpleasant sensation of fatigue, in one case increasing to somnolence. Apostoli and others lay great stress upon the importance of patients taking an hour's rest after the application, and then to go home in a conveyance. This precaution is especially recommended after electro-puncture. The author found this an unnecessary precaution. He repeated the applications every other day. He believes that he might have had more success if he could have protracted the treatment. At the same time he treated two cases constantly for six months without achieving anything as regards the diminution in the size of the growth. Pain was in all cases favorably influenced by the electrical treatment, in one case with astonishing promptness. The constipation which generally existed was uniformly removed. The general condition of the patient was remarkably bettered.

L. R.

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ORIGINAL COMMUNICATIONS.

AFTER-TREATMENT OF LAPARATOMY.¹

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THE importance of this subject, the lack of unanimity in the after-care of laparotomy, and the absence of definite, classified information must be my apology for this paper.

Let us consider :

I. THE TOILET OF THE PATIENT.

Before the patient is taken from the operating table it is essential that if the body be wet from the operation or from perspiration, it should be rubbed thoroughly dry. The clothing, if damp or soiled, should be changed. This is most essential to the comfort of the patient, and may remove a source of infection. A flannel vest and ordinary nightdress are sufficient clothing; drawers and stockings are usually distressing to, and interfere with the proper care of, the patient.

¹ Read before the Chicago Gynecological Society, April 18th, 1890.

II. THE SICK-ROOM.

It being assumed that the room is surgically clean, the only points for consideration under this head will be those which directly pertain to the after-care of the patient.

The bed should be made as follows: Over the mattress a sheet is pinned *smoothly* and *tightly*; over this two layers, each consisting, in the order named, of rubber sheet, sheet, and draw-sheet. This allows of thorough change of bed with the least possible disturbance of patient. The covering should consist of a sheet and a sufficient number of *blankets* to keep the patient warm. If it is desired to make the bed softer and warmer, a blanket may be placed beneath the lower rubber sheet. Blankets next to the patient often produce discomfort and materially interfere with cleanliness. All bedding should be surgically clean, warm, and absolutely dry. Bedding may be conveniently warmed by placing hot-water bottles in the bed during the time of operation. The sick-room should be kept at an even temperature of 70° to 72° F. Sunlight should be freely admitted to the room, which should also be thoroughly ventilated.

III. GENERAL CONSIDERATIONS.

1. *Stimulation*.—Surface temperature is often subnormal as a result of shock, hemorrhage, or anesthesia. The importance of restoring the surface temperature is made manifest when we consider the bad effects oppression of the heart and congestion of the kidneys and air passages may have upon the recovery of the patient.

The treatment consists simply in restoring the cutaneous circulation by friction, artificial heat, stimulants, and clothing. Artificial heat and clothing depress, friction stimulates: stimulants primarily increase visceral congestion, friction relieves this condition. Hence dry friction with the hand is preferable, and in most cases nothing else will be required. The temperature of the surface of the entire body may speedily be elevated in this manner. A chill will often be readily overcome by friction, while artificial heat, stimulants, and clothing seem to have but little effect. The indiscriminate use of artificial heat is very bad practice. It is depressing, uncomfortable, and in most cases unnecessary, and should never be

employed when the surface of the body is warm. In severe cases, however, it is advisable to supplement friction with artificial heat, stimulants, and clothing.

Marked stimulation may be produced by lowering the patient's head and raising the extremities. This stimulates by diminishing the work of the heart. A ready and efficient method is to raise the foot of the bed, say to an angle of thirty degrees, and to remove all pillows and bolsters.

Stimulants are seldom required immediately after operation, and should not be employed unless the indications for them are marked. If the surface temperature be normal, they are not needed though the pulse may be weak and the skin pale. But when these conditions exist and the surface temperature is subnormal, then forced stimulation is advisable.

Stimulants are then best given per rectum. For this purpose good brandy is preferable, though whiskey may be employed. It is best given in as large an amount of hot dilute saline solution as will be readily retained. A dilute saline solution increases stimulation and promotes absorption. Beef tea, to which a small amount of salines has been added, is an excellent menstruum, as it contains the salts natural to the body.

Rectal stimulation may be supplemented in severe cases by hypodermic injections. For this purpose brandy is the best stimulant, but aromatic spirits of ammonia, either alone or with brandy, may be employed when a more diffusible stimulant is needed. The hypodermic use of ether is not justifiable, as its advantages over brandy and ammonia are slight, and as it is so liable to produce marked local disturbances.

2. *After-Effects of the Anesthetic.*—Ether alone will be considered in this connection, as it is the anesthetic most commonly used, and as its after-effects are similar to those of other anesthetics. The after-effects requiring attention are vomiting, congestion of the kidneys and air passages, and thirst.

The after-effects of ether result from its elimination and from its direct action upon the circulation. These effects vary directly with the amount of the anesthetic given and with the space of time in which it is given. When the blood is saturated by the administration of a large amount of ether, the cerebral reaction is more marked and the excretion by the

lungs and kidneys is over-stimulated. When the same amount of ether is given during a longer time, the cerebral reaction may be lessened or wanting, and the excretion may be simply stimulated.

Vomiting after ether is probably of central origin, but sometimes it appears to be due to local action on the stomach. The treatment of vomiting may be by inhalation, external applications, hypodermic injections, position, and internal medication. The fact that vomiting is absent in some cases in which ether has been given very sparingly towards the close of operation, or in which the patients have fallen into a quiet sleep, has led me to think that the sparing administration of ether after operation might produce a similar result. Here the cerebral reaction would not be sufficient to cause vomiting. Those patients who vomit while apparently anesthetized will not be benefited by inhalations. External applications, as mustard paste and other irritants, and heat and cold, seem to diminish vomiting by revulsive action and by diminishing the supply of blood to the stomach.

Hypodermic injections of five minims of compound Majendie's solution often have a delightful effect; vomiting ceases and the patient becomes quiet or sleeps. Vomiting of cerebral origin may be diminished by lowering the patient's head.

Greig Smith advocates copious draughts of warm water. Kussmaul recommends washing out by means of the stomach pump; unless the vomiting is a result of elimination of ether by the stomach, this treatment would be useless. If such a cause for the vomiting exist, small doses of volatile stimulants in a little hot water may be useful, as they promote absorption. My experience with many of the remedies recommended for vomiting has led me to believe that internal medication is of little avail.

Ether may produce secondarily congestion of the kidneys which may result fatally. Two such cases have come under my observation. Nausea, vomiting, cephalalgia, and restlessness, when due to this cause, will be relieved by increasing the urinary secretion. Diminished urinary secretion is usually accompanied by congestion or inflammation of the respiratory passages. The urinary secretion is best increased by the administration of hot liquids in large amounts, if tolerated by the

stomach. Dry cups over the region of the kidneys, followed by poultices or hot fomentations, may be useful, and should always be employed if satisfactory results cannot otherwise be obtained. Urinary secretions may be increased by producing active catharsis. Hot liquids may be given by the rectum, if not tolerated by the stomach.

The daily excretion of urine for a few days after laparatomy varies from one to two pints. In a series of thirty cases under my charge at the New York State Woman's Hospital, the average excretion of urine was: First day, 17.33 ounces; second day, 18.25 ounces; third day, 19.2 ounces; fourth day, 20.5 ounces; fifth day, 22.7 ounces; sixth day, 24.4 ounces. This gradual increase in the amount of urine excreted was probably due to the amount of liquids given.

It is advisable in all cases to produce active counter-irritation, and to apply a thick layer of cotton batting over the chest to prevent possible bronchitis. Turpentine is a convenient and efficient counter-irritant. Should bronchitis occur, however, the treatment should be local and the use of nauseant expectorants avoided as far as possible.

3. *Pain*.—After laparatomy the patient may suffer little or no pain, but usually, as the effects of the ether pass away, pain occurs; as a rule it is in the abdominal wound and is often very severe. The real pain may be aggravated by the mental effect of the ether intoxication.

Dry heat applied over the seat of pain will often give much relief. A convenient and efficient method is the application of a hot porcelain plate wrapped in cotton batting or flannel. The use of opium should, if possible, be avoided, but quiet and sleep should never be sacrificed to humor the prejudice of a misguided therapist. When necessary the hypodermic injection of three to five minims of compound Majendie's solution will usually produce the desired result, and will seldom, if ever, be followed by ill effects.

4. *Restlessness* may be present independently of pain, and may materially interfere with the recovery of the patient. Quiet may, as a rule, be satisfactorily produced by means of baths and massage. An extremely restless patient will often pass into a quiet sleep during the administration of a bath, massage, or hot-water vaginal douche.

When sedatives are required, the bromides, antipyrin, valerian, or hyoscyamus may be employed; all of these, with the exception of the bromides, may be administered per rectum.

5. *Insomnia* may exist independently of pain or restlessness. A moderate amount of sleep is necessary to the comfort and preservation of strength of the patient. When pyrexia exists, sleep greatly diminishes the tendency to delirium. After the night succeeding the operation the patient should obtain at least three to four hours' sleep per night. To produce sleep it may be necessary to employ the soporifics best adapted to the patient.

6. *Thirst* has been considered an annoying and difficult symptom to relieve. Ether may produce thirst by reason of its rapid evaporation whereby the body is deprived of water, or by causing circulatory disturbance. Hemorrhage deprives the body of liquid and thereby produces thirst. A too common mistake is to withhold liquids from the patient, for the body requires at least one pint of liquid daily to keep its waste solids in solution. The treatment, then, should be to restore the normal amount of liquid to the body and to equalize the circulation. This may be accomplished by the frequent giving of hot stimulating drinks to the limit of the absorbent capacity of the stomach; that is, until the stomach rejects the liquid. If the stomach does not absorb the liquid it should be given per rectum. Large draughts, particularly of iced water, should be avoided, as absorption does not take place, as the thirst is only temporarily relieved, and as nausea and vomiting usually follow.

7. *Flatulency* exists in almost every case and is often the most distressing symptom. It is a result either of loss of tone of the walls of the stomach and intestines, or of fermentation. The treatment should be preventive or palliative. The preventive treatment consists in giving such foods as do not easily ferment, and in the early removal of detritus by catharsis. Diet and cathartics will be considered under their proper headings. Palliative treatment has for its object the removal of gas from the bowels, which may be accomplished by the rectal tube, by enemata, by internal medication, by external applications, and by the position of the patient. The frequent use of the rectal tube, a No. 20 gum elastic cathe-

ter, is most efficient. The best results are obtained with the patient in the left lateral position, but it may be used in the dorsal position. Large hot enemata often cause the escape of much flatus, and also stimulate the intestinal wall. The addition of Labarraque's solution, turpentine, or asafetida increases their action. Small amounts of spearmint, peppermint, charcoal, aromatic spirits of ammonia, etc., may be given in a little hot water with advantage. Dry heat, turpentine, etc., applied over the epigastrium, often give relief. The escape of gas is more free with the patient on the left side.

IV. CARE OF PATIENT.

1. *Diet*.—The amount of food given should vary with the condition, and the kind of food with the idiosyncrasy, of the patient. Food may be administered by mouth and rectum. In most cases it is necessary to give food only by the mouth, but when forced nourishment is required, or when the stomach is partly or entirely deficient in its function, rectal alimentation should be employed.

Milk is the best food in these cases. The objection of many eminent laparatomists that milk is a bad food, as it often ferments, curdles, and is not absorbed, that it produces flatulency, nausea, vomiting, and constipation, may be overcome by adding carbonated waters, such as soda, Vichy, seltzer, etc., to the milk. This charged water thoroughly separates the milk and thus prevents fermentation and curdling, and renders it easy of digestion. It does not produce flatulency, nausea, or vomiting, it relieves rather than produces constipation, and it is relished by most patients. Lime water does not possess all these advantages.

During the twenty-four hours following operation no food should be given by the mouth. After this time, milk and charged water, one drachm each, may be given every hour. During the succeeding twenty-four hours half an ounce of this mixture may be given every hour. The third day the amount may be still further increased and given at longer intervals. On the fourth or fifth day broths or freshly prepared beef juice may be given. On the fifth or sixth day the diet may be increased by milk or cream punch, raw oysters, soft-boiled eggs, etc. When milk is not tolerated by the patient, koumiss,

peptonized milk, buttermilk, beef juice, prepared peptones, etc., may be substituted. I have found expressed beef juice, seasoned to the taste, very satisfactory; or rare-broiled beef-steak, chewed but not swallowed, may be given. Too little is better than too much food, especially when pyrexia exists.

Rectal alimentation: The enemata should be as large as may be readily retained. They should be given at intervals of not less than four hours, as this time is required for their absorption. The addition of a small quantity of salt increases their absorbability. I have used the following enema with good results:

℞ Beef Juice..... 3 vi. to ̄ iss.
 Egg i.
 Brandy..... 3 ii. to ̄ i.
 Beef Tea, salted.... sufficient to make ̄ iv. to ̄ vi.

M.

If this be not well retained, opium may be added. Peptonized milk, prepared peptones, etc., may be used in place of the beef juice.

2. *Cathartics*.—The time of administration of the first cathartic after laparotomy depends to a great extent upon the amount of raw surface consequent upon the breaking-up of adhesions, and upon the development of tympanites and septicæmia. Repeated catharsis diminishes the liability to the formation of adhesions. In uncomplicated cases it is better not to disturb the patient by cathartics until the fifth or sixth day. Cathartics in such cases may be administered either by mouth or rectum. Tartrate of potassium and sodium in drachm doses, given in charged water every hour for six or eight hours, if necessary, is a mild, palatable, and usually efficient cathartic. Calomel in six- to ten-grain doses with bicarbonate of soda, given in one dose or in divided doses, is equally efficient; but it may produce tormina, nausea, and vomiting. I have obtained more satisfactory results from calomel in powder than in tablets. Tarrant's mixture, citrate of magnesium, or seidlitz powders may be used. The action of the cathartic should be assisted by an enema, as it increases the effect and lessens straining and intestinal contractions. Fæcal accumulations never occur functionally in the small intestine; hence,

when cathartics by the mouth are contra-indicated, the large intestine may be thoroughly emptied by enemata. The following enema has in my experience been the most efficient :¹

R Magnesii Sulphatis..... ℥ ij.
 Glycerinæ..... ℥ i.
 Aquæ..... q. s. ad ℥ iv.

M

The prolonged use of nutritive and cathartic enemata may cause irritability of the rectum and contraction of the sphincter ani, which will produce constipation and occasion much distress. Thorough dilatation of the sphincter will relieve these conditions.

3. *Catheterization*.—The patient should void urine without the aid of the catheter, for its use is frequently followed by cystitis. This probably results from the use of a dirty catheter, from sepsis from the vagina carried by the catheter into the bladder, or from incomplete emptying of the bladder. The catheter should be thoroughly cleansed and kept in an antiseptic solution, the portion of the vagina surrounding the urethra should be wiped out before each catheterization, and care should be taken not to remove the catheter until the bladder has been completely emptied. In this connection it is well to bear in mind that spasm of the neck of the bladder may clamp a soft catheter sufficiently to momentarily stop the flow of urine. As a rule, catheterization every six hours will be sufficient.

4. *Baths and Massage* should be given each day for the comfort of the patient and for their effect upon the cutaneous circulation and secretions. Frequent and thorough rubbing of the parts subjected to pressure will usually prevent the formation of decubitus. Vaginal douches may be used to relieve pelvic pain.

5. *Position*.—The patient should be kept on the back for the first twenty-four hours, but during this time the hips or shoulders may be tilted; after this time, if there are no complications, the patient may be turned on the side. Propping up the shoulders, head, or knees often gives relief, and in the same way pain in the back may be much alleviated.

¹ Thesis before Chicago Gynecological Society, June 21st, 1889.

6. *The Wound*.—If no drainage tube has been used and the patient does well, the wound should not be disturbed until the sixth or seventh day, when the stitches should be removed. It is best to remove the stitches while the wound is dry. In case this is impracticable, it should first be thoroughly cleaned, and, after the removal of the stitches, should be covered with a moist antiseptic dressing for twenty-four hours. I have seen a number of cases in which simple moistening of the wound before the removal of stitches was followed by suppuration. When a drainage tube has been used, it should be removed after twenty-four hours, or as soon after the operation as it fails to drain. If there is little or no suppuration around the drainage tube, the sinus should be left undisturbed to heal. On the removal of a tube which has been in the wound several days, however, it may be advisable to keep a strip of gauze just through the abdominal wall until the deeper part of the sinus is healed. After forty-eight hours the drainage tube is practically shut off from the abdominal cavity. It is not advisable, therefore, to allow the tube to remain beyond this time, unless it is connected with a suppurative sac. It is absurd to allow a drainage tube to remain *in situ* for more than forty-eight hours in anticipation of a septic accumulation. The insertion of a strip of gauze into the drainage tube, which cleans it by capillary action, is far preferable to the too common method of frequent syringing of the tube. The gauze should be changed before it becomes offensive.

V. COMPLICATIONS.

1. *Hemorrhage* may be detected through the drainage tube or by its effect upon the patient's condition. The first method is not always reliable, as much blood may escape without appearing in the tube. Hemorrhage may be controlled by topical measures, but may require operative treatment. Slight hemorrhage low down in the pelvis may be checked by vaginal tamponade. Irrigation, through the drainage tube, of hot solutions may stop the hemorrhage. In a case under my charge in which all measures employed, including secondary laparotomy, had failed, the hemorrhage was checked by irrigation, through the drainage tube, of a 1 : 1,000 solution of bi-chloride of mercury at a temperature of about 115° F. The

hemorrhage is occasionally so severe as to necessitate opening of the abdomen and the application of Mikulicz's gauze drainage.

2. *Cardiac Failure* may occur without assignable cause or as a result of some other complication, and should be treated in the usual manner.

3. *Septicemia* is a result of infection from septic material in the body or carried there during the operation. The septic material may make its presence known soon after the operation, or after it has multiplied in the body generally or locally, as in an abscess at the seat of separated adhesions and around ligatures, sutures, etc. The symptoms may be those of peritonitis or of general septic infection.

The treatment should vary with the severity and course of the disease. The treatment of general septic infection may be eliminative, supportive, and operative. The use of cathartics is the sheet anchor: consistently but cautiously given, they will do much toward the cure of many such cases. The occurrence of diarrhea in septicemia is evidence that the intestine is the principal eliminator of the poison. To produce catharsis, therefore, is to assist nature. It not only removes the poison from the blood, but also allows the circulation to take up the septic matter for its destruction and elimination. Calomel, in not less than ten-grain doses, is probably the most efficient cathartic by the mouth. Rochelle salts may also be employed. I always use the concentrated magnesium sulphate enema. I have recently used it in six cases of peritonitis, and in not one of them has it failed, although opiates were freely given. This enema has the great advantage of being a local depletent, as it acts by diffusion. It may be repeated a number of times without danger or discomfort to the patient. If the bowel fails to expel the exuded liquid, it should be emptied by the rectal tube.

Peritonitis should be treated by keeping the patient strictly in the dorsal position, by relieving the pain, and by forcing elimination. Hot or cold, dry or moist applications over the whole abdomen are curative and grateful to the patient. Hypodermics of morphia and atropia should be given to control pain. Morphia should be given in small doses frequently repeated until the desired effect is obtained. A smaller

amount of the drug is thus required, and the untoward effects, as nausea and vomiting, which usually result from too large doses, are materially lessened. Intestinal elimination may be accomplished while the patient is under the influence of opiates.

The propriety of keeping the temperature in septicemia low by the use of antipyretics is doubtful. No evidence exists that pyrexia destroys the poison of septicemia, as it probably does the poison of relapsing and intermittent fever. Keeping the temperature low seems not to benefit but to weaken the patient. Much less oxidation takes place while the patient is under the influence of antipyretics, and it is quite probable that oxidation is a strong factor in the destruction of the poison. I do not believe in reducing the temperature when it does not exceed 103° F., as this temperature may act as a curative agent, and as the body can tolerate it for a long time without perceptible damage to the tissues. A temperature of 104° F. and over should, however, be reduced, as, when continued for some time, it produces vitreous degeneration of glandular organs and muscles and thus diminishes elimination.

Hyperpyrexia is best reduced by cold applications and by the administration of antipyretics. The abdominal ice-water coil is an efficient means of applying cold, and is also a local remedy when peritonitis exists; but its use is not devoid of danger, as it may produce nephritic congestion. I have observed this in a number of cases, and my opinion is that, when the secretion of urine is scanty, it should not be used continuously, but may be applied frequently. The amount of urinary secretion, however, should be carefully observed. The continuous use of the ice coil also tends to paralyze the intestines. Cold sponge baths and cold packs may be used to reduce temperature. Quinine, antifebrin, and antipyrin may also be used; the two latter, however, should be given in stimulants. The usual supportive remedies should be given as indicated.

The free action of the intestines, kidneys, and skin should be maintained, if possible, for through these channels much heat and many partially oxidized compounds are eliminated. Much of the poison is probably discharged through these excretories.

Operative treatment should be employed when relief does not follow general treatment, and before the patient becomes hopelessly ill. It is doubtful whether operative interference is ever justifiable in peritonitis before general septic infection develops, for the peritonitis can then be otherwise cured, and if there is a collection of septic material it will produce general septic infection.

The operation should usually consist in reopening the abdomen, in breaking up all fresh adhesions, and in thorough irrigation and drainage. While the adhesions are being broken up, constant irrigation should be used, so that the septic material set free will not be absorbed.

Any collections of pus that may occur in the pelvis or about the wound should receive thorough surgical treatment.

1355 WABASH AVENUE.

A CASE OF CANCER OF THE CERVIX UTERI WITH CO-EXISTING PREGNANCY OF THREE AND ONE-HALF TO FOUR MONTHS; PLACENTA PREVIA; VAGINAL HYSTERECTOMY; RECOVERY.

BY

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(With woodcut.)

VAGINAL hysterectomy for cancer of the uterus is now of very common occurrence, but the coincidence of pregnancy with this disease, at a stage early enough to admit of extirpation of the organ per vaginam, is much more rare. I have been able to find a record of but eleven cases.

In 1881¹ Sir Spencer Wells recorded a case of "Excision of the Pregnant Uterus for Cancer." Also in 1881,² A. L. Gallabin reported an "Excision of the Gravid Uterus for Epi-

¹ British Med. Journal, 1881, page 856.

² Indipendente, Torino, 1881.

thelioma of Cervix." In 1886¹ Berthod reported a case of "Cancer of the Uterus with Six Months' Pregnancy and Shoulder Presentation." This he turned into a breech, and spontaneous delivery followed. Twenty-four days afterwards he performed vaginal hysterectomy.

J. Greig Smith, in his work on "Abdominal Surgery," refers to the removal per vaginam of a cancerous uterus in an early stage of pregnancy. It is probably the same case as reported by him in the *Lancet*, 1887, 1, page 14. Munchmeyer² reports a case of vaginal hysterectomy for cancer of the uterus, operated upon by Dr. Korn. On opening the uterus it was found to contain a fetus of one month.

In the inaugural dissertation of E. Mohr, "Ueber Total Extirpation des Carcinomatösen Uterus Gravidus per Vaginam," seven cases are recorded, including the one by J. Greig Smith already noted. The remaining six are: (a) C. Theim-Cottbus; operated upon August 3d, 1885; ten weeks' pregnancy. (b) L. Landau; operated upon May 6th, 1886. (c) M. Hofmeier; operated upon February 12th, 1887. Also three cases reported by him for the first time. (d) Brennecke-Sudenburg; two cases; operated upon February 27th, 1887, and November 28th, 1888, at the second and fourth month of pregnancy respectively. (e) Kaltenbach; operated upon January 7th, 1889, in the fourth month of pregnancy.

The case I am about to report was operated upon February 6th, 1890, and is the only one I can find reported in America.

Mrs. C., 39 years old, Scotch; housewife; family history good on both paternal and maternal sides; menses established at 18 years of age, always regular and painless, with moderate flow. Married twenty years; three children, youngest 18 months old.

Patient considered herself well until October, 1889, when she noticed that the menstrual flow increased in amount, and there was also an intermenstrual bloody discharge of variable quantity, which finally became almost continuous. During the last two weeks several sharp hemorrhages had occurred

¹ *Gaz. Méd. de Paris*, 1886.

² *Archiv für Gynäkologie*, Band xxxvi., page 443.

³ Halle, 1889. (a) *Frauenarzt*, Juli, 1886. (b) *Archiv für Gyn.*, Bd. xxix., Heft 3. (c) *Deutsche Med. Wochenschrift*, Jahrgang 1887.

at night. She had no pain, but came to our dispensary on account of increasing weakness from loss of blood. Examination revealed the presence of an epithelioma of the cervix uteri, which bled profusely on being touched. Tinct. ferri chlor. was applied to the growth, the vagina tamponed with pads of cotton dipped in alum and glycerin, and patient was sent to the New England Hospital. Present condition : Thoracic and abdominal organs apparently normal ; appetite good ; bowels regular ; sleeps well and is not nervous. Urinalysis : amount in twenty-four hours, about forty-four ounces ; color, dark yellow ; reaction, acid ; no sugar or albumin. Microscopically, nothing of special note. From the vagina a constant discharge of blood mixed with pus and detritus, odor not specially bad ; vagina large ; cervix large, lacerated bilaterally ; projecting from the os a friable, ulcerating papillomatous mass which bleeds readily. Bimanually uterus can be felt in anteversion ; fundus firm, size of a three and one-half to four months' pregnancy. Uterus freely movable ; broad ligaments not infiltrated.

In the absence of any other sign of pregnancy than the size of the uterus, and the improbability of conception taking place in an organ thus diseased, the diagnosis was made of cancer of the cervix and probably also of the body of the uterus. A sound was not passed for fear of exciting a serious hemorrhage.

The patient was examined by a number of the members of the hospital staff, and the diagnosis was concurred in and vaginal hysterectomy advised. The projecting portion of the growth was removed three days before the operation, and tinct. ferri chlor. applied to stop bleeding. The fresh specimen, examined microscopically, showed a large variety of cells of various sizes and shapes. Vaginal injections of a solution of mercuric bichloride 1:10,000 were given thrice daily, and the patient otherwise prepared for operation.

Operation February 6th, 1890. After careful disinfection of vagina and external genitalia, the vaginal walls were held apart by retractors, and the cervix drawn down to vulva with vulsellum forceps. An incision was carried around the cervix about 2 cm. from the external os, well beyond the diseased tissue, and the vagina was then stripped up from the cervix,

by means of the finger and scalpel handle, as far as the vesico-uterine juncture, thus partially releasing the bladder in front and the rectum behind.

The peritoneum was now opened through the posterior cul-de-sac, and a pad (made of several thicknesses of antiseptic gauze sewed together and a tape firmly attached) was passed into the abdominal cavity, to hold back the intestines and prevent the entrance of blood. The lower part of the broad ligament was now separated on either side, the finger gradu-



F, fetus; *U*, uterine wall; *P*, placenta; *C*, cancerous cervix.

ally worked through the ligament close to the uterus, and a pair of clamp forceps applied to this portion, which included the uterine artery. After cutting between the cervix and clamps, it was possible to draw down the uterus considerably. The finger was now carried in from the side, and the vesico-uterine ligament severed from above. Owing to the large size of the uterus it seemed necessary to retrovert the fundus. This was only accomplished with considerable effort, and meantime the clamp on the right side tore off, requiring the

application of three pairs of forceps to catch the bleeding vessels.

The upper part of the broad ligaments (including the ovary, Fallopian tube, and ovarian artery on either side) was next clamped, and the uterus cut loose and removed. Afterwards the upper clamps were replaced by ligatures, leaving altogether five clamps in the vagina.

The parts were now douched with a solution of mercuric bichloride, 1 : 10,000, and afterwards with plain boiled water, and the gauze pad was withdrawn in such a way as to bring together, so far as possible, the peritoneal edges. A small piece of iodoform gauze was placed loosely in the vagina and around the clamp handles, which, as a matter of precaution, had previously been tied with tape.

The pulse remained good throughout the operation. Patient was put to bed with knees tied together and the handles of the clamps resting on an antiseptic pad placed between the thighs. Liquid diet ordered, and urine drawn every six hours.

Examination of specimen: Outside length of uterus, 5 inches; width, $3\frac{1}{4}$ inches; depth of cavity, $4\frac{1}{4}$ inches. Uterus was slit up on its anterior surface throughout its whole length. Macroscopically the cervix showed an ulcerating, papillomatous mass dilating its lumen and extending to or beyond the internal os. The cavity of the uterus contained in its upper part a fetus measuring $3\frac{1}{4}$ inches from vertex to breech; the entire lower segment of the uterus was filled by a placenta which covered the internal os. Microscopically the typical epithelial nests and alveoli were quite distinct.

After-treatment: Reaction from the operation was prompt and satisfactory. The last clamps were removed at the end of forty-eight hours, and no after-hemorrhage occurred. The bowels were moved on the third day with calomel followed by magnes. sulph. The catheter was no longer required. The highest temperature during the first week was 100.5° F. The pulse was a little accelerated at times, but there was no pain or other unpleasant subjective symptom.

A little bloody oozing during the first days was followed by a slight muco-purulent discharge, in consequence of which the vagina was douched daily with boiled water. During the sec-

ond and third weeks there was frequently a decided rise in temperature, often as high as 102° F. for a short time. The cause of this proved to be a slight exudation around the ligature stumps. It was never extensive, and there was at no time any abdominal distention. The fever and sensitiveness would subside after the application of Churchill's iodine and a glycerin tampon.

Patient went home on the twenty-third day, feeling entirely well. The vaginal discharge had entirely ceased, and there was only a linear cicatrix to be felt high up in the cul-de-sac. The patient gradually assumed her household duties, and continues in good health at the present time, six months after operation.

In reviewing the case, several points present themselves for consideration.

In the first place, would it have been possible to make a positive diagnosis of pregnancy? No menstrual period had been missed, the diseased condition of the cervix had obliterated the changes usually found, nor were there any subjective symptoms, as might have been expected in an intelligent multipara. The growth was already sloughing, and its vascularity would account for the sharp hemorrhages, and, altogether, cancer of the uterine body seemed more probable.

The coincidence of placenta previa in so large a proportion of these cases is especially interesting and affords opportunity for much speculation. Its occurrence is attributed by Kaltenbach to the presence of secondary inflammatory changes in the endometrium. This theory is plausible only where the malignant process has preceded conception—usually a difficult point to decide.

The size of the uterus was in this case a serious consideration. Had the patient been seen a few weeks later, vaginal hysterectomy would only have been possible after a preliminary abortion, thereby increasing the gravity of the prognosis.

The alternative of awaiting the completion of pregnancy is fully discussed in Mohr's brochure, and emphatically negatived. When we remember the inelastic nature of carcinomatous tissue, the probability of rupture of the lower segment of the uterus during parturition, the hopeless prognosis for the mother in any form of abdominal delivery, there can be

little question that, if seen in time, vaginal hysterectomy should be performed. This view was strongly urged in the discussion of a case of supravaginal hysterectomy in a cancerous uterus with co-existing pregnancy of two months, presented by Mr. Bedford Fenwick before the British Medical Society on November 13th, 1889. Exception was taken by several members to his having performed abdominal instead of vaginal hysterectomy, as he thereby left a stump to be the source of future infection.

In regard to palliative operations, such as amputation or excision of the cervix, experience teaches that these are usually followed by abortion, which involves great danger of infection to the freshly denuded surfaces; and recurrences have proved to be more frequent and speedy than after the major operation.

In conclusion, it is worth noting that the mortality of vaginal hysterectomy in these cases is as yet *nil*.

THE USE OF THE OBSTETRIC FORCEPS.¹

BY

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ALTHOUGH this instrument has been in use more than two hundred years, and although it is confessedly one of our most valuable aids in facilitating difficult labors, the indications for its employment and the proper limits of its use have not yet been generally agreed upon. On the one side stand those who use the forceps whenever labor is at all prolonged, and on the other are found a larger number who say that it should only be used when danger to mother or child is imminent, and that the instrument, through too frequent use, has been productive of more harm than good. Between these extremes is found the greater part of the profession, who use the instrument with varying degrees of frequency, usually, I think,

¹ Read before Colorado State Medical Society, June 18th, 1890.

less frequently than they should. In looking over the history of the forceps, however, we see that there has been a gradual but steady increase in the frequency with which it has been resorted to, and that this increase has been attended by a steady reduction in both infantile and maternal mortality.

Out of this difference of opinion, and the discussion which has arisen in consequence of it, have been evolved certain indications for the use of the forceps upon which nearly all are agreed, as follows:

1. In cases of rigidity of the perineum, where, notwithstanding fair pains, the head remains stationary in the vagina for several hours until a large, firm swelling appears on the head, and the pains finally become weaker or die away.

2. In weak pains, when there is reason to anticipate grave danger to mother or child from longer delay.

3. When the size of the head is disproportionate to that of the pelvis, the latter being only moderately contracted.

4. In convulsions, heart failure, or other dangerous condition of the mother.

5. In prolapse of the cord, placenta previa, or cases where, from any cause, the heart beat of the fetus is becoming weak.

In regard to these and perhaps one or two other indications there is no dispute, and hence no need to speak more at length. But within the past decade or two there has been a distinct tendency to extend the use of the forceps so as to include, in addition to the above cases, a large class where neither mother nor child is as yet in urgent danger, but where labor is delayed greatly, though not hopelessly.

Dr. Johnston, the distinguished master of the Rotunda Lying-in Hospital at Dublin from 1868 to 1875, probably exerted a stronger influence in this direction than any other man, and his statistics, when compared with those of his predecessors in the same institution, seem to furnish ample justification for the change of practice. In a paper advocating the more frequent use of the forceps, which I had the honor to read before the Denver Medical Association a little over a year ago, I referred to the statistics of this institution, and I will again make use of the same figures, having since then seen nothing more conclusive or trustworthy, as the masters were all equally eminent, the circumstances and surroundings

were substantially the same, and the number of cases was large, so as to eliminate the element of chance which so vitiates statistics founded upon a limited number of cases.

I have not had access to the full reports of the various masters, but I find published abstracts of them, a few of which I present. Thus Dr. Clark, who was master from 1786 to 1793, in 10,387 deliveries, of which 183 are classified as tedious, used the forceps 14 times with 6 maternal deaths, while he used the perforator in 49 cases.

During the mastership of Dr. Collins, 1826 to 1833, the forceps was used in 24 cases out of a total of 16,654, but the perforator was employed in no less than 118 cases.

In striking contrast with these are the statistics of Dr. Johnston, who was master from 1868 to 1875, and who in 8,052 deliveries used the forceps 762 times, or once in 10.7 cases, while craniotomy was resorted to only 34 times, or once in about 237. In the last year of his mastership, with 1,025 confinements, he used the forceps 113 times, or once in 9 cases, saving 103 of the mothers and 102 of the children, craniotomy being resorted to in only 5 cases. The statistics of more of the masters might be given, but these are fairly representative.

In a paper by Dr. Harper in the Transactions of the Obstetrical Society of London, vol. i., is an analysis of the Rotunda statistics, from which it appears that 1 mother in 22 and 1 child in 5 died in unassisted tedious labors, while 1 mother in 56 and 1 child in 8.4 died when forceps was used, and 1 mother in 10 died after craniotomy; so that the mortality of mothers was less than half as great when forceps was used as in the unassisted tedious labors, while the fetal mortality was similarly reduced from 20 per cent to about 12 per cent.

But these statistics, favorable as they are to the use of the forceps, do not do full justice to this instrument, for most of the masters used the forceps so infrequently and after so much delay that often it was too late to save the child, as appears from the fact that the statistics of Dr. Johnston, who inaugurated the more frequent use of the forceps, are much more favorable than the above average, as he in his 752 forceps cases had only 44 still-born children, or 1 in 17.

But, not to weary you with statistics which could be multi-

plied to the same effect, let us consider the advantages of a frequent resort to the forceps.

1. We save both maternal and fetal life. This appears clearly from the statistics quoted above, being true of a frequent as compared with a moderately infrequent use of the forceps, as well as a frequent as compared with a rare use of this instrument; for it is the early use of the forceps, before the various complications which attend natural labor have had time to arise, that is most beneficial. After long delay—"letting nature take her course," to use the favorite phrase of some practitioners—when the powers of the mother are long since exhausted, and the tissues are so swollen that the head is becoming impacted, either waiting for nature or any form of interference, whether by forceps or perforator, is apt to prove fatal, and it is such cases which unjustly swell the mortality charged by the older writers upon the forceps. The proposition that "danger is proportioned to delay," both for mother and child, is shown to be true by the statistics quoted above, and especially by a table in Dr. Harper's paper already referred to, showing the direct bearing which delay in labor has on maternal mortality: In 5,640 labors finished in 6 hours, 21 mothers died, or one in 268; in 4,489 labors finished in 7 to 12 hours, 31 mothers died, or one in 144; in 1,745 labors finished in 13 to 24 hours, 15 mothers died, or one in 116; in 163 labors finished in 25 to 36 hours, 4 mothers died, or one in 41; in 84 labors finished in 36 hours or more, 8 mothers died, or one in $10\frac{1}{2}$. Or, deducting the deaths from non-puerperal causes, the results to the mothers were: In 6 hours and under, one in 470 died; in 7 to 12 hours, one in 214 died; in 13 to 24 hours, one in 145 died; in 25 to 36 hours, one in 45 died; above 36 hours, one in 12 died.

Of these labors it must be kept in mind that "none of them were instrumental, but all were begun and finished by natural efforts alone. All foot, breech, arm, and placental presentations, as well as forceps and craniotomy cases, are excluded."

As to the influence of delay in labor upon fetal mortality, we find from the same series of cases that of 5,640 born within 6 hours, 79 were still-born, or one in 71, or, excluding those born putrid, one in 207; of 4,489 born in 7 to 12 hours, 70 were still-born, or one in 64, or, excluding those born pu-

trid, one in 159; of 1,754 born in 13 to 24 hours, 56 were still-born, or one in 31, or, excluding those born putrid, one in 55; of 247 born in over 24 hours, 49 were still-born, or one in 5, no note of the putrid born.

2. We prevent the danger of swelling, impaction, and the subsequent inflammatory complications. As we have seen, delay in the second stage of labor in many instances terminates fatally to the mother. But in many more cases, in which labor is terminated before fatal results ensue, serious injury is inflicted by the long delay.

3. We save a vast amount of suffering. This is a motive which seems to appeal but feebly to many obstetricians, having become so accustomed to witnessing this suffering that they look upon it as an inseparable accompaniment of labor; but, to my mind, it is a sufficient reason for resorting to the forceps when labor is long delayed, even if we were sure that it would be safely terminated by the natural powers after hours of weary waiting. Anesthetics are here usually unavailing, as they would probably still further weaken the pains and prolong the labor. Many argue that as labor is a physiological process, it must not be interfered with, and, remembering the aphorism that "meddlesome midwifery is bad midwifery," they close their ears to the groans and entreaties of their patients. Yet if these same practitioners should be consulted by a patient complaining of dyspepsia or scanty menstruation, they would doubtless be assiduous in their efforts to relieve her, although digestion and menstruation are equally physiological.

4. We greatly diminish the number of craniotomies. This is readily seen from the statistics already quoted.

These are the principal advantages claimed to be gained by this practice. On the other hand, a large number of dangers have been urged against it, such as laceration of uterus, vagina, and perineum, rupture of varicose veins, pelvic abscess from contusions of the soft parts of the mother, subsequent inflammation of the uterus or peritoneum, tearing asunder of the symphysis, and fracture of the pelvic bones; and, for the child, contusion of the scalp or face, temporary paralysis of the face from pressure of a blade on the facial nerve, compression of the brain, and fracture or depression of the cranial

bones. All of these accidents have followed the use of forceps, no doubt, but those which are not trivial and temporary may be avoided if proper precautions are taken and if due care and skill are exercised; otherwise forceps are as dangerous as a uterine sound or any other instrument under similar circumstances.

In applying the forceps a distinction must be made between those cases where the head lies low in the pelvis or on the perineum and those in which the head is at or above the brim. The former are very simple and easily managed; the latter are far more serious for the mother and require all the care and skill of an experienced operator to avoid serious injury. In all cases the bladder must be emptied, so as to avoid risk of laceration or rupture by pressure of the blades; the blades should be warmed, rendered aseptic, and well smeared with vaseline. The vagina should be washed out with a solution of sublimate, creolin, or other reliable antiseptic, especially if the forceps is to be introduced within the uterus. Then, the left or lower blade being taken in the left hand of the operator, lightly poised in the vertical position between the thumb and fingers, one or two fingers of the right hand are introduced into the vagina, and upon them as a guide the lower blade is lightly passed up beside the head. This is then well depressed and held firmly in this position by the nurse or some assistant while the other blade is being introduced in a similar manner on the other side, no force being used. If force is necessary it indicates that something is wrong, and the blade should then be partially withdrawn and a new attempt made. When the blades are in position they should be brought together and an attempt made to lock them. If this cannot be readily done no force must be used, but rather one should be partially removed and introduced in a different position until the blades can be locked without difficulty. Of course if the blades are exactly opposite they can be locked as readily inside the pelvis as outside; if they are not quite opposite, and force is used to twist one around, the force so exerted causes serious pressure upon the soft parts of the mother. The blades having been locked, gentle traction should be made during the pains; or, if pains are entirely absent, at similar intervals, so as to give time for

the perineum to dilate. As the head is about to emerge the instrument can be removed, if rupture is feared, though the blades are so thin that they scarcely increase the circumference of the head. At this stage of labor the application of forceps is a simple and safe operation if the instrument is handled gently.

When the head is above the brim, however, the case is far different, and here the operation must be acknowledged to be one of great difficulty as well as danger. The added dangers are the liability of catching and tearing the cervix, the risk of laceration of the cervix, the danger of sepsis from introducing a foreign body within the uterus, the interference with the normal movements of the head, and the danger of pushing back the head and changing the presentation. Here the whole hand must sometimes be introduced into the vagina to guide the tip of the blade past the cervix, thus diminishing the space of the vagina and increasing correspondingly the difficulty of introducing the blades. Here, therefore, the forceps should not be introduced except in very urgent cases, and then only by those who have given special attention to the use of the forceps, as in inexperienced or unskilful hands they may do as much harm as a catheter in a case of enlarged prostate or stricture. Ordinarily the forceps will grasp the occiput and face, and prevent rotation ; so it should be removed after the head has descended into the pelvis, and reapplied, if necessary, so as to grasp the head transversely. It is both difficult and dangerous to rotate the head by the forceps.

In the intermediate cases, where the head has fairly engaged in the brim of the pelvis but will not descend, the cervix is usually retracted so as to be in less danger of being caught, and the head cannot slip away from the forceps, a single finger, or two fingers at most, introduced into the vagina, will serve as a guide for the blades, thus greatly diminishing both the difficulty and danger of the operation. In most of the cases of delayed labor the natural powers of the mother are sufficient to dilate the cervix and cause the head to engage, but fail, sooner or later, to propel the head along the parturient canal. In these cases the application of forceps is not excessively difficult, and it is at this stage that delay is most

dangerous, and in which we would most strongly urge the application of the forceps if the pains become inefficient and remain so for two or three hours.

Most of the authorities recommend that ether be administered to nearly the surgical extent before any attempt is made at introduction of the forceps, and no doubt the complete relaxation so induced somewhat facilitates the operation; yet I have always preferred to forego these advantages for the sake of the greater readiness with which a timid patient will consent to an operation, and the pain of introducing them, even in a primipara, is so slight, if carefully done, as to be quite unimportant. After the blades are adjusted and traction begun, ether or chloroform may be administered as necessary to deaden the pain, just as in normal labor.

In what has been said thus far the forceps has been considered simply as a tractor: and, indeed, this should be its chief—we had almost said its exclusive—use. It is true, it is sometimes used as a compressor of the fetal head, as a rotator, or as a lever, but no one who considers the fearful power possessed by this instrument, and the delicate nature of the tissues upon which its force falls, will wish to use it thus except as he may be compelled to do so. Used as a tractor in the axis of the parturient canal, supplementing the deficient *vis a tergo* by a *vis a fronte*, there is no increased pressure upon the tissues of the mother and consequently no bruising. Also, the compression of the fetal head is little if any greater than it is subjected to in simply dilating the parturient canal, and the duration of the compression is so much less that the danger from this source is really much diminished when forceps is promptly applied. This is very clearly shown by an article by Sachs and Peterson (*Journal of Nervous and Mental Disease*, May, 1890), containing an analysis of 140 cases of paralysis in young children, of which 49 were congenital, and of these 49 no less than 16 were attributed to delay in labor and the consequent long-continued pressure on the head. It is true, forceps were used in 6, but it was after long delay; and the fact that paralysis occurred in 10 cases of tedious labor where forceps were not used justifies the inference that the delay and not the forceps was responsible. In the words of the authors just quoted: "The moral is that

the forceps should be applied if necessary, or delivery hastened by other means, if protracted labor can be avoided. A child's brain and skull have a wonderful power of resistance, but do not credit them with greater virtue in this respect than they really possess."

TREATMENT OF ATONIC POST-PARTUM HEMORRHAGE. ¹

BY

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It is long since our journals have given us anything new or original in regard to the management of this most dreadful calamity. I use the term "atonic" to exclude the other forms of hemorrhage, such as arise from accidental lacerations and ruptures, and those, known as secondary, caused by adherent placenta. The causes of atonicity of the uterine fibre are many. I shall speak of those only which have reference to the treatment that I shall describe.

1. Those cases where feeble contraction, beginning with the very first stage of labor, may only be the herald of inefficient uterine action in the third stage and after its completion.

2. Those in which the first and second stages are accompanied by violent contractions—*i.e.*, protracted labors, tiring the women as well as each uterine fibre.

3. Those due to over-distention of the uterine cavity by twin pregnancy, hydramnion, etc.

4. A very slow third stage.

5. Those due to rapid delivery, either spontaneous or by forceps.

6. Hastening Credé's method, causing partial detachment of the placenta and giving the uterus no rest to contract during the third stage.

7. Chloroform and alcoholic stimulants during labor.

8. Last, but most important, cases run down by bad hygiene,

¹ Read before the Central Medical Association, New York.

and cases of frequent labor causing a predisposition to the bleeding diathesis.

With the symptomatology we all are well acquainted, so we will pass on to the treatment. Nature tries to take care of these cases, closing each vessel by the contraction of the uterine fibres and by forming clots in the open mouths of the sinuses. We should, as much as possible, try to aid her, not to work independently of her precautionary measures. First of all, the physician must be calm and prompt, and should act most intelligently. He must have confidence in himself and his measures, in order to gain the confidence of his bystanders, thus securing their very best services. The patient should at once be put in a recumbent position across the bed, and the limbs ligated. Compress the fundus against the hand introduced into the uterine cavity. If this fail, try Zweifel's method by putting one hand behind the fundus on the abdomen, the other hand into the cul-de-sac, drawing the cervix forward.

Before proceeding I shall first tabulate the usual routine of procedures:

1. The two *natural means* of which I spoke, viz.:
 - a.* Contraction. *b.* Coagulation.
2. *Artificial means.*
 - (1) *Compression*—this comprising
 - a.* Manual compression. *b.* Compression by foreign body in utero.
 - (2) *Styptics.*
 - a.* Heat. *b.* Cold. *c.* Electricity. *d.* Styptic drugs.

One loses too much time preparing hot and cold injections for irrigation; there may be no ice at hand; your battery is at the office and so out of reach. Styptics not only have these objections, but they are dangerous and always produce more or less sloughing.

I am quite satisfied that, if compression fails to stop the flowing, there is nothing as handy, certain, and practically without danger as tamponing the entire uterine cavity and vagina with aseptic gauze, and preferably that containing about ten per cent of iodoform. This method truly and certainly assists nature, for it helps to coagulate the blood, and if not bringing on contractions, answers the same purpose.

You can always have a few yards in your bag, and, inasmuch as your hand is already in the uterine cavity to make compression, you can pass up your gauze in one or two long strips with your placenta forceps. You will find that you at once control the bleeding; you have an aseptic canal filled to the vulva with an antiseptic material. I have had occasion to use this method twice during the past three weeks, and with a most gratifying result in each case.

After washing the external genitals with soap and a solution of bichloride, 1:1,000, irrigate the *vagina* with the same strength solution. See that the bladder is empty. Grasp the cervix with a forceps or with the fingers, draw it well down to the vulva, then pass in your gauze in one long or two shorter strips. The amount of gauze required is surprisingly small.

Advantages.—1. It undoubtedly brings on contraction in the most atonic uterus; if not, what form of compression is so handy and certain? If you use your hand in the uterine cavity, there is no limit to the time it must remain there. You cannot leave your patient with safety even after the bleeding is controlled.

No man has the lasting strength to keep his hand in the uterine cavity without at times letting up on his grip. Then the patient is not at all comfortable with your hand in her genital tract. If you tampon, you can leave your patient and feel safe until your next visit.

2. It does stop the bleeding at once, whereas with the other methods you experiment with the one styptic that will do it slowly.

3. Again, this method is as safe in the hands of the beginner as in those of the most skilful surgeon. If the young man mistake his case of lacerated cervix for one of post-partum hemorrhage, is it not better that he tampon and stop the bleeding, and then find his error, rather than do it on the post-mortem table?

As regards carrying infection into the uterus with the gauze, or picking it up in the vagina, I can say but this: that in the hands of the thoroughly aseptic man there is no danger. His gauze is kept in a can and taken from there directly into the uterus. With the man who is reckless it is less dangerous than his badly disinfected hand put into the

uterine cavity. As for contaminating the gauze as it passes through the vagina, that objection is *null*. There is very little infection present after the bichloride douching, and what few germs may enter are killed by the carefully prepared gauze.

It is unnecessary to use anesthesia for this procedure, since it is nearly painless and takes but a few moments.

To conclude: 1. We have the tampon, in the hands of the careful practitioner a certain measure and without danger.

2. We have, in packing the vagina, a means at the same time to stop the bleeding from a badly torn cervix.

3. We have this method calling for much less care in diagnosing the exact state of affairs.

4. You can leave your patient with safety and remove the gauze in twenty to twenty-four hours. At the end of this time your patient has had a good sleep and the uterine fibres are well able to take further charge of the case.

THE RARITY OF PELVIC CELLULITIS

BY

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As you will notice, the heading of my paper is in the form of a question, and that question more plainly put is this: Is pelvic cellulitis in women as common a disease as we were taught a few years ago to believe? In this short paper I wish to present my views upon this question, and also to recite a few facts bearing upon the subject. But first let me state that, as far as my early teaching goes, I am a "Hebrew of the Hebrews," born and bred in the camp of the cellulitists.

At the time of my service as an interne in the Woman's Hospital of New York, every surgeon, assistant surgeon, and

¹ Read before the Inter-County Med. Society at Ashland, Wis., August 12th, 1890.

house officer was accustomed to make a diagnosis of pelvic cellulitis in every case where, upon physical examination, the pelvic roof was found hard and indurated, and the uterus fixed in the characteristic plaster-of-Paris exudate. The course of these inflammations was either to soften and break down into pus, which discharged through the anterior abdominal wall, into some neighboring hollow viscera, or into the vagina; or to slowly absorb, leaving the contractions of the intrapelvic ligaments, which were called chronic cellulitis. Occasionally, as a result of the suppurating pelvic cellulitis, a chronic pelvic abscess resulted, which might alternately fill and discharge for years, the best of drainage and irrigation failing to cure a certain number. This, then, was the pathology of pelvic cellulitis, as taught by Emmet and his school five and six years ago, and the one which I have very closely adhered to until within the past twelve or eighteen months. During the past two years my work in abdominal surgery and in the dead-house, together with the experience of other men working in the same direction, has convinced me that most, if not all, of the pelvic inflammations which produce hard, plaster-of-Paris exudates in the pelvic roof were peritoneal inflammations; and that it was a fibrinous exudate thrown off from the inflamed peritoneum that matted together the pelvic viscera and fixed the uterus hard and fast in the pelvis, not an exudate in the cellular tissue. I do not mean that cellulitis could not occur, but that I consider it a very rare disease. I also believe that we occasionally do have purulent collections beginning in the pelvic connective tissue, but that such collections are very, very rare, and that such inflammations are always associated with a certain amount of peritonitis, and the peritonitis, when so produced, is the most important factor in every such case.

"I have also been forced to believe that by far the greatest number of all pelvic inflammations arise from the passage of a septic poison direct to the peritoneal cavity through the uterus and the Fallopian tube, producing either general or local peritonitis, abscess of the tube, abscess of the ovary, of the tube and ovary combined, or encysted peritoneal abscess. When the abscess is so produced it may remain in a quiescent state for a long time, a constant menace to the patient, or it

may work its way to the surface through the abdominal wall, or it may rupture into some of the neighboring hollow viscera, or, more rarely, it may rupture into the peritoneal cavity.

"Simply because a woman has had a pelvic abscess located at the side of the uterus, which has broken into either the vagina or the rectum, and, after discharging a certain length of time, has disappeared, is no proof that the centre and cause of the trouble has not been a tubal or an ovarian abscess. Such an abscess may ulcerate through the posterior layer of the broad ligament, and so open into the cellular tissue, sending finger-like sinuses out in any direction. My experience of the past has convinced me that this is the pathology of by far the greater number of all pelvic abscesses, especially of all chronic pelvic abscesses. Such a pathology also explains why a certain number of pelvic abscesses, treated either by vaginal section and drainage or even by through drainage, have not been cured, but have continued to discharge year after year. For if a diseased ovary or tube be the centre of the trouble, the discharge will not stop until the cause be removed."

In June of this year I read a paper bearing directly upon this subject before the Minnesota State Medical Society. The title of this paper was "The History of Six Pelvic Abscesses." The two preceding paragraphs of the present paper I have quoted verbatim from that article, and I wish also to quote, in as concise a form as possible, some of the most important points in the cases then reported.

CASE I.—Mrs. W., *æt.* 33. One year and a half ago Mrs. W. had a miscarriage, followed by puerperal septicemia; since that time she has had some eight attacks of inflammation of the bowels, the last being particularly severe, confining her to bed for nearly a month, her life being despaired of during part of that time. She was first seen December 1st, 1889. An examination showed the uterus slightly enlarged, fixed in the pelvis with the characteristic plaster-of-Paris exudation, fixing the entire roof of the pelvis; a very tender mass on the right side about the size of a man's fist, and a mass on the left side about half as large. December 7th, 1889, laparotomy was performed, and although it was necessary to exert considerable force in tearing the adhesions which bound the diseased ovaries and tubes to the surround-

ing peritoneal surfaces, that I might be able to lift these masses from their beds, the patient recovered without a bad symptom or a rise in temperature. The mass on the right side was found to be a tubal abscess, the tube and ovary being so intimately united that it was impossible to separate them. The abscess cavity, which lay in the ampulla of the tube, contained about three teaspoonfuls of thick pus; the left tube also contained pus, but in a much smaller quantity.

When this woman left St. Joseph's Hospital, four weeks after the operation, I made a careful pelvic examination. The uterus was quite movable, and the plaster-of-Paris feel to the pelvic roof had almost entirely disappeared.

CASE II.—In this case I assisted at the performance of an autopsy on a patient who died after a radical operation for the cure of a chronic pelvic abscess. The abscess had existed for eight years, discharging through a sinus which opened just above Poupart's ligament. This patient had been seen by very many of our best men, and her trouble had always been diagnosed to be suppurating pelvic cellulitis. At the time of the autopsy, tracing the old sinus down behind the broad ligament on the left side, there was found a diseased ovary containing a pus cavity which also opened into the sigmoid flexure of the colon.

CASE III.—Mrs. R, æt. 35; first seen on February 14th of this year. The patient had had two miscarriages, the first one five years ago; the second, in August last, was followed by a sharp attack of peritonitis, which has confined her to her bed most of the time since. Examination showed a large, tender mass lying beside the uterus, on the right side, and the entire roof of the pelvis was very dense and hard. Her most distressing symptom was vesical tenesmus. On the 15th of February laparotomy was performed, and a mass the size of a man's hand was found lying behind the uterus. With great difficulty this mass was separated from the surrounding soft parts, adhesions being very dense. The mass was raised into the abdominal wound, ligated, and cut off. Upon cutting into the mass it was found to be a tubal abscess containing about four ounces of very fetid pus. This patient recovered without a bad symptom, and left the hospital on the thirty-third day after the operation.

August 8th, 1890. I have this day had an opportunity of examining this patient; I find that the pelvic hardness has entirely disappeared, so that the uterus is quite movable. There is absolutely no tenderness of either broad ligament. The vesical irritability, which caused her so much trouble before the operation, has never troubled her since that time.

CASE IV.—Mrs. W., æt. 42. This patient was first seen in January of 1889, when I took care of her, with a severe pelvic inflammation. At that time I feared the formation of a pelvic abscess. A large, inflammatory mass formed beside the uterus, on the right side, fixing the uterus in the pelvis. In a few weeks' time the inflammatory deposit partially absorbed, the mass lessened very much in size and the uterus became quite movable, and the patient's temperature and pulse became normal. I then felt that the danger of pelvic abscess was past. Up to March 15th, 1890, when I performed laparotomy, I saw this patient a number of times when suffering from uremic attacks. Without any appreciable cause, unless perhaps exposure to cold, she would have suppression of urine, so that in twenty-four hours she would pass less than six ounces. This condition would last two or three days and then slowly disappear; her symptoms would abate; she would have almost no rise in temperature, no pus, albumin, or casts in the urine; but these attacks were always accompanied with an increase of pelvic tenderness and pain, most severe on the right side of the uterus. In the latter part of last winter the attacks became more numerous, and the suppression of urine would continue for a longer space of time. Fearing that the pelvic trouble would lead to serious mechanical kidney trouble, I performed a laparotomy on the 15th of March last. At the time of the operation the right ovary was found to be twice its natural size, fixed in the pelvis; a pyo-salpinx in the right side was found, the abscess lying in the ampulla of the tube, the bottom of the abscess cavity being the bottom of Douglas' cul-de-sac; the abscess contained about one-half ounce of very fetid pus, and was broken while trying to raise the tube into the abdominal wound; the left tube was also enlarged, and contained about a teaspoonful of pus. A small parovarian or intraligamentous cyst was found in the right side. In enucleating this cyst from the broad lig-

ament, the posterior layer of the broad ligament was badly torn, so that it became necessary to ligate the bleeding vessels of the broad ligament. Large quantities of hot water were used to irrigate the abdominal cavity, but the woman died thirty six hours after the operation, from acute septic peritonitis.

I consider that my only fault in this case was the attempt to enucleate the parovarian cyst from the broad ligament. The rupturing of the abscess into the peritoneum I do not consider to be so very dangerous an accident under ordinary circumstances; but when it is necessary to leave a large raw surface, combined with the rupture of an abscess into the abdominal cavity, it makes the case an extremely dangerous one.

CASE V.—Miss X., æt. 21. Ten days before the operation, which was performed at St. Joseph's Hospital, this city, Miss X. passed a large quantity of pus from the rectum. The diagnosis of her condition before the operation was pelvic abscess following pelvic cellulitis. Laparotomy demonstrated the fluctuating mass to be a suppurating ovary about the size of a child's head, which was removed by Dr. Wheaton, the surgeon whom I was assisting.

These cases just reported were all given in my paper read in June. Since then I have seen three other cases.

CASE VI.—Mrs. M., æt. 25, a Polander; married two years. I first saw her about the 1st of April, this year; she had then suffered from several very severe attacks of pelvic inflammation during the preceding few months. On the 17th of June I operated on this woman in the City Hospital in St. Paul. I found the intestines lying in the pelvis, matted so solidly together that I could not get into the pelvic cavity until I separated each individual coil of intestine from its fellow. By tearing the universal adhesions I was able to bring up into the wound a diseased Fallopian tube about four times its normal size, but not containing any pus. This woman recovered without a bad symptom, and one month after the operation the uterus was free and movable in the pelvis and the hard induration entirely gone. When discharged from the hospital she considered herself completely cured.

Two other cases have been seen during the past month—

one, a case of Dr. Wheaton's, a typical case of the old pelvic cellulitic type. Laparatomy showed an ovarian abscess about the size of a large goose egg. The last case was one of my own, where the family physician, in sending the patient to me, in his note described her condition as one of pelvic cellulitis. Laparatomy showed an ovarian abscess large enough to completely fill the pelvis.

I have gone somewhat extensively into this rather hackneyed subject for two reasons: 1st. In the discussion elicited by my paper read in June, I was quite severely criticised by several of the older members of the profession, who quoted Dr. Emmet to me, and intimated that I did not know cellulitis when I saw it; and also that the differential diagnosis between salpingitis and cellulitis "was very simple and very clear, easily made by one accustomed to digital diagnosis." As these critics hardly know Dr. Emmet, even in a social way, I do not consider that their criticism bears any great weight. 2d. Although I have seen in the medical journals reports of many cases where ovarian and tubal abscesses had been successfully removed, I have never seen this subject, namely, the relation of pelvic cellulitis to salpingitis, explained satisfactorily to myself.

With regard to the treatment of ovarian and tubal abscesses, I have but a word to say. Undoubtedly a certain percentage of the pelvic abscesses treated by the old expectant method, or by vaginal section and drainage, have been perfectly cured. The question then arises: Is it absolutely necessary to remove every suppurating ovary and tube? It seems not, and as though the wisest surgery would lead one to make an exploratory laparatomy, removing the ovary and tube if it can be done without too great an injury to the patient. If it cannot be removed, open the abscess cavity, aspirating if it be a large abscess, wash it or sponge it out, and examine from the inside of the cavity for the best situation in which to drain. I certainly think that it is very bad surgery to blindly aspirate or cut into these abscess cavities from the vagina without the aid of an exploratory laparatomy; for when you blindly incise the peritoneum you run a great risk of doing an irreparable injury.

CORRESPONDENCE.

DR. BACHE EMMET'S CASE OF TUBAL PREGNANCY.

TO THE EDITOR OF THE AMERICAN JOURNAL OF OBSTETRICS.

DEAR SIR:—In the July issue of your JOURNAL is a case of tubal pregnancy reported to the New York Obstetrical Society by Dr. Bache Emmet. While having the highest respect for Dr. Emmet's learning and skill, I yet must consider the case as unproven. Who has demonstrated the vermicular action of the Fallopian tube? I think the accepted idea at present is that the normal contents of the tube are carried toward the uterus by the action of the ciliæ. Is it not dealing with an undemonstrated premise when one says galvanism causes such contraction of the few unstriped muscular fibres in the tube as to force an impregnated ovum forward until it reaches the uterine cavity? Would it not be more rational to suppose pregnancy in a uterine cornu, with galvanism causing death of fetus and consequent abortion? I have recently followed a case to a successful termination which may have some bearing on the question.

Mrs. M., IVpara, had been in delicate health for years with disorders of the endometrium. Examined her in February of this year. Found an enlargement to the right of uterus, bulging the vaginal vault downward. The uterine artery could be felt pulsating with great force over the tumor. The uterus was crowded to the left side of pelvis. She had menstruated last in November. Had been having irregular hemorrhages ever since, sometimes gushes and nearly always a streak of blood. At times discharged a dark, grumous material, which came away in shreds and strings. I suspected tubal pregnancy, and told her so. In March she was examined by Dr. J. McP. Scott, who, although he made no positive diagnosis, agreed as to the feel of the parts per vaginam, and that the case was certainly not one of normal pregnancy. The whole abdominal tumor was on the right

side. She suffered intensely at times, requiring prodigious doses of morphia to quiet her. She continually asserted that this differed from all her other pregnancies. She was very much larger; the child was in an awkward position, and, although vigorous, did not change his general position, namely, head on symphysis and knees under ribs on right side. All this time no fetus could be felt with the finger in the vagina, and the os tinea was away up on the left side posteriorly. It could not be felt unless two fingers were in the vagina and great force was used. Being satisfied that it was a case of tubal pregnancy, arrangements were made with Dr. T. A. Ashby to operate at full term, or sooner in case of rupture. About three weeks before term she had a terrific attack of pain. Her sufferings were intense. I gave her three grains of morphia hypodermically daily to relieve her. Within a week of the time set for operation I saw her, and her whole aspect was changed. She was brighter and very cheerful, and volunteered the remark that she was now all right. She felt just as she did with all her other children when near delivery. On examining her I found the parts as would be expected one week before full term in a normal pregnancy, except that the os uteri still was away over to the left. Her delivery was normal in every respect. I examined her thoroughly immediately after expulsion of placenta, but found nothing abnormal, except a spot of excessive tenderness, as large as a silver dollar, over the entrance of the right tube. Two days after, when the uterus was somewhat relaxed, I could detect decided irregular enlargement of the uterus at the entrance of the right tube.

Mine was a case either of interstitial pregnancy or pregnancy in the right horn of a uterus bicornis. This explanation will, I think, apply equally as well to Dr. Emmet's case as to call in the aid of a supposition entirely undemonstrated.

Yours very truly,

V. M. REICHARD, M.D.

FAIRPLAY, MD., August 18th, 1890.

TRANSACTIONS OF THE TENTH INTERNATIONAL MEDICAL CONGRESS,
AT BERLIN, 1890.

SECTION FOR OBSTETRICS AND GYNECOLOGY.

(Specially reported for this JOURNAL by DR. A. CZEMPIN, of Berlin.)

FIRST SESSION, AUGUST 4TH.

PROF. DOHRN (*Königsberg*) in the Chair.

PROF. OLSHAUSEN (Berlin) welcomed the members of the Congress, who were present in large numbers.

GALABIN (London), being prevented by illness from attending, sent a paper on

ANTISEPSIS IN OBSTETRICS.

The results of the antiseptic method in obstetrics as at present obtained in maternities are ascribed by the author mainly to the use of sublimate as a disinfectant for the hands and instruments, and for the purpose of irrigating the vagina before and after labor and during the puerperium.

The rate of mortality in English maternities since the introduction of sublimate is 2:1,000 instead of the former rate of 10:1,000 (total mortality); deaths from septicemia or pelvic inflammation, 1.5:1,000. The number of cases in which slight elevations of temperature occur after delivery has fallen one-half. But the gain over earlier times is most striking in the percentage of the septic forms of fever. Their proportion in the London General Maternity sank from 40 to 2.5 per cent. In that institution the patients lie on horse-hair mattresses without beds. The mattresses need to be sterilized only when a case runs an unfavorable course, that is, proves septic. For vaginal irrigation a sublimate solution of 1:4,000 is not strong enough; for the first three or four days

it should be twice that strength. Fluo-silicate of sodium is much inferior to sublimate.

For private practice the same rules apply as regards hands and instruments; no examination should be made unless the hands are washed in 1:1,000 sublimate solution. For the lubrication of the hands a sublimated glycerin solution of 1:1,000 is best.

Discussion is invited of the following questions: 1. Should sublimated vaginal irrigations be given in private practice in normal cases, and, if so, under what conditions? 2. Should they be given only once or twice, or during the entire puerperium? 3. If sublimate be rejected, which one of the less poisonous antiseptics is the best, and in what strength is it to be used? 4. Has the iodide of mercury any practical advantage over the bichloride of mercury? 5. Is it possible to demonstrate how much the rate of mortality has decreased under modern antiseptics in private practice or under the care of midwives who are under state supervision? 6. Is disinfection sufficient to prevent the transmission of puerperal sepsis, or must the accoucheur abstain temporarily from obstetric practice after the occurrence of such a case? Is the obstetrician in similar danger when treating cases of erysipelas or scarlatina?

Galabin thinks that in normal cases a single post-partum vaginal irrigation with sublimate solution 1:2,000 is sufficient, but that during the entire puerperium 2 to 2½ per cent carbolic irrigations should be used. Where one of the graver obstetric manipulations is required or fever sets in, vaginal irrigations 1:2,000 should be used for at least four days. The most important part of antiseptics in private practice consists in the most thorough disinfection of the hands of the physician and midwife.

SLAWJANSKI (St. Petersburg) read a paper on

ANTISEPSIS AND THE RESULTS OBTAINED WITH IT IN RUSSIA.

He submitted the report from 52 Russian maternities. Antiseptics has forced its way throughout Russia, and every physician has familiarized himself with its methods. The manner in which it is carried out in the various institutions depends on the means at their disposal. In the four years

1886-89 the number of deliveries in the 52 maternities was 76,646; the number of puerperal diseases, 6,363, or 8.57 per cent. The puerperal mortality was 290, or 0.38 per cent. In order to appreciate the influence exerted by the special arrangements of each institution on the number of diseases and deaths, S. makes five subdivisions: 1. Obstetric clinics of the medical faculties. 2. Maternities connected with schools for midwives. 3. Maternities not so connected. 4. Obstetric wards of hospitals connected with schools for midwives. 5. The same not so connected. The statistics of the year 1889 are: Number of labors in the 52 institutions, 21,280; of these, 6,019 or 28.7 per cent were primiparæ, 14,890 or 71.26 per cent multiparæ. Operations were performed in 3,103 cases, or 14.47 per cent. Complications (eclampsia, placenta previa, rupture of the uterus) occurred in 290 cases, or 1.36 per cent. The puerperium was free from fever in 85.66 per cent of the cases; single elevations of temperature were observed in 7.44 per cent of the cases, repeated elevations in 6.9 per cent. Deaths from puerperal diseases, 60, or 0.28 per cent; from non-puerperal diseases, 100, or 0.46 per cent.

The following are the author's deductions from this material:

1. In Russian maternities antiseptics is universally employed, so that the puerperal morbidity and mortality decrease in them year by year, and at present show a very satisfactory rate—namely, as above, puerperal morbidity, 6.9 per cent; puerperal mortality, 0.28 per cent.

2. Where the antiseptic precautions are strictly and scientifically employed, the presence of students should have no influence on the morbidity and mortality of the institutions.

3. With the steady application of the same antiseptic precautions, the number of diseases and deaths depends upon a greater or less frequency of pathological, operative, and complicated deliveries in the institutions.

4. Large maternities under strict antiseptics are of more use to the country than small institutions.

ANTISEPTICS AND MIDWIVES.

STADFELD (Copenhagen) dwelt chiefly on the question of midwives, and thought that probably another generation will

pass by before we shall have the class of midwives we desire. At present we may be sure that where a midwife has assisted a physician in a case of difficult labor, it will form the starting point of an epidemic. As to the prophylactic irrigation of the vagina, the question whether the latter contains only the normal cocci can be decided bacteriologically. This source of disease is probably very rare. Moreover, it is a well-known fact that deaths occur in groups at intervals of several years. This would hardly be the case unless the genitals of the parturients contained cocci only exceptionally. S. did not think it feasible to restrict midwives to the external examination alone. As to the third stage, the expectant method prolongs the duration of labor. Careful expression of the placenta is justified. The retention may be of long continuance, during which the patient is always exposed to infection; she desires to see the labor terminated. Hence the expulsion of the after-birth should be somewhat accelerated; this method has done good service. The speaker summed up as follows:

1. Careful antisepsis justifies the existence of maternities, not alone for the purpose of instruction, but as true humanitarian institutions.

2. The principle according to which a filial system under licensed midwives is conjoined to maternities has now become unnecessary and perhaps dangerous.

3. The introduction of antisepsis into obstetrics has been very salutary for the new-born children likewise.

4. Scrupulous cleanliness must be impressed upon midwives. An order to furnish them antiseptics, especially carbolic acid, on demand, and at times gratuitously, is very serviceable. Midwives should not undertake the care of the puerperium, especially not when the parturient is sick.

5. The surroundings of the parturient must also be antiseptic; prophylactic irrigations of the vagina during labor by midwives do more harm than good.

6. Midwives should examine no more than is necessary.

7. Cases, even if slight, of puerperal fever must be at once reported to the nearest sanitary bureau both by the midwife and by the physician. Several cases in the practice of one

midwife demand a thorough disinfection under supervision, and eventual suspension for some time is desirable.

FRICTSCH (Breslau) read a paper on

ANTISEPSIS IN THE PUERPERIUM.

In reviewing the last two decades—for before that time there was no such thing as antiseptics as a direct method in puerperal fever—we can distinguish historically three stages. The first comprises the experiments of isolated obstetricians with antiseptics; these were more or less careful experiments. Then followed the antiseptic high tide; there could hardly be enough of disinfection, sterilization, irrigation. This standpoint has been gradually abandoned in favor of a moderated procedure. In the beginning of a new method of treatment, theoretical points of view always predominate in the absence of experience. Theory, however, can be consistent much more easily than practice. At first the demands were very zealous. Too much was done in the beginning; for instance, let us call to mind permanent irrigation. These experiments were shared by a number of practical physicians, and they formed by no means a small proportion. For a time the principle obtained that the parturient was not aseptic, that she was in permanent danger. The poison which threatened her must be removed; carbolic acid *per se* can never do harm. This towering structure has been utterly demolished by practice: asepsis could not be reached by antiseptics. The parturients were attacked by fever; reports appeared showing that disease was more frequent with the modern plentiful employment of carbolic acid than it was formerly; even fatal cases could be traced to the abundant use of carbolic acid, and this settled the matter so far as the practitioner was concerned. This method had to be given up. To be sure, it was impossible to explain why fatal cases were more frequent in spite of carbolic acid, but warnings were heard everywhere to leave healthy parturients in peace. To-day we are all convinced that if a parturient is healthy she must be left alone; at most the external genitals are cleansed. Moreover, an absorptive fever may become high, a slight case may grow severe. Is it not better to treat the slight case at once as a grave one, and

to employ the necessary antifebrile remedies and local antiseptics, instead of losing time by reprehensible inactivity! Some physicians gave vaginal irrigations even in slight fever. Before the antiseptic era elevations of temperature were likewise observed, so that a bad prognosis suggested itself. We now know that disinfection may bring down new cocci from above. At all events, most careful observation is required in the first days of the puerperium, and a prominent place belongs to the thermometer. Among us, too, everything is in continual activity; what is to-day looked upon as correct may be rejected to-morrow by new discoveries. This is our daily experience in the development of the theory of antiseptics and asepsis. When the temperature is high the case is probably what we call puerperal sepsis. Against this disease the following measures are at our disposal: 1. Strengthening of the organism; 2. Removal of the noxious materials. Port wine, eggs, cognac, and beef tea are of no use when the uterus and vagina contain a number of infectious matters which are continually formed anew and absorbed. We cannot close the portals, but we can remove the infectious masses. Where there is nothing that can be absorbed, nothing will be absorbed. Irrigation of the uterus serves a twofold purpose: formed noxious matters are removed, and the formation of new ones is prevented. Irrigation is essentially the inauguration of the treatment. Diseases which have already become extra-uterine must not receive intra-uterine treatment.

PIPPINGSKJÖLD (Helsingfors) expressed himself on the whole in favor of the aseptic method; especially for midwives he demands the greatest possible cleanliness, but he would not reject the antiseptic treatment for the most urgent cases.

DOEDERLEIN (Leipzig).—There are on the one hand those who base their views on clinical experience and say: Internal disinfection is not necessary and is even injurious. On the other hand there are those who devote themselves to bacteriological studies and say: I have made bacteriological experiments for some time; a final decision is not yet possible, but my results are liable to bridge over the chasm. Two forms of cocci are regularly found which differ microscopically, anatomically, and bacteriologically. The first form is characterized chemically by the high acidity of the secretion.

anatomically by the occurrence of pavement epithelium and few mucous corpuscles, biologically by the exclusive appearance of bacilli. The second type is characterized by diminished acidity, is at times even virulently alkaline, by pavement epithelia, by cocci of all sorts, and by the disappearance of the bacilli. (Specimens of normal and pathological vaginal secretion were shown.) On examining the secretion before labor, two groups manifest themselves: 1. Healthy pregnant women; 2. Those with pathological secretion. In the former group the bacilli are harmless, even if the examination be made by students, which cannot always be avoided in clinical institutions. Owing to gonorrheal infection, there may be, for instance, parasitical settlement of streptococci and staphylococci—that is, dangerous germs. This second group of pregnant women must at first be treated like the former; they must be caused to be examined without disinfection, as is necessary in didactic institutions. If the bacteriological view be correct, a high degree of morbidity must result. A crucial experiment would be, if after disinfection an equal number of diseases attacked this second group. In general practice this procedure, of course, cannot be recommended because the bacteriological views have not yet been cleared up, but that would be a way in which both groups could unite.

PRIESTLEY (London) described a visit to the large English hospitals, that of King's College, etc. He had seen good results there which he ascribed less to the mode of antiseptics practised than to the extreme cleanliness in the wards. We must have large hospitals; they offer greater security against infection than smaller ones. He did not agree with Galabin, but favored the view that the antiseptic method will spread in every country. Still, he believed that even sublimate solution 1:4,000, which Galabin recommends as the weakest, could produce injurious effects. On the whole, both obstetrics and surgery are greatly indebted to Sir Joseph Lister for the introduction of antiseptics, for the hospital reports undoubtedly show a pronounced lowering of the mortality compared with the time previous to antiseptics.

SECOND SESSION, AUGUST 5TH, 8 A.M.

PROF. HALBERTSMA (*Utrecht*) in the Chair.

LEOPOLD (Dresden) exhibited a number of very interesting specimens of

EXTRA-UTERINE PREGNANCY.

One was an interstitial pregnancy which ended fatally by rupture of the ovisac. In two specimens rupture had likewise occurred, but the patients were saved by laparotomy; in both cases the pregnancy was of the early months. A fourth specimen had been removed previous to the occurrence of rupture. A fifth case was an ovarian pregnancy in the ninth month, the fetus having been dead two months. A sixth case was a tubo-ovarian pregnancy, also of the ninth month, with dead fetus. In a seventh case a lithopedion was removed which had originated in an ovarian pregnancy and had been carried for twenty-five years. Leopold also showed a uterus extirpated for total prolapsus, and the pregnant uterus of a cow, the lymph vessels of which had been artificially injected.

BARBOUR (Edinburgh) exhibited specimens from an exceedingly instructive case of a primipara who had died of heart disease during the second stage of labor.

FROZEN SECTIONS

were made of the body and plaster casts of the child. The specimens show very clearly the retraction ring of the uterus which had produced a pronounced constriction of the fetus below the shoulders. Moreover, the fetus was elongated and its arms pressed closely to the head by the retraction ring. The head of the fetus showed a second constriction caused by the dilated external os. A series of other frozen sections made by the same author show the appearance of pregnant and fully developed uteri. Barbour also exhibited casts of the uterus in various stages of pregnancy.

DEEHRSEN (Berlin) presented two women with their children. In both patients, owing to grave complications, he had made, with the seissors, during labor

NUMEROUS INCISIONS INTO THE EXTERNAL OS,

which was still undilated. The incisions extended deep into the vault of the vagina, and were intended to permit immediate delivery. The first case was a primipara aged 23, in whom eclampsia furnished the indication for the operation. In the other case, a primipara aged 46, there was a tight stricture of the vagina; besides incisions of the os, others were required into the levator ani and the perineum. Duclurssen believes his operation to be free from danger and appropriate for cases in which the delivery must be hastened because the life of the mother or child is jeopardized.

NEUGEBAUER (Warsaw) showed pictures of a case of

SUICIDE OF A PREGNANT WOMAN NEAR TERM.

She had jumped from a window and lived for some time. Fracture of the base of the skull was suspected, and Cesarean section *in articulo mortis* was not thought desirable. When the abdomen was opened after death, a longitudinal rupture was found in the uterus, which was empty; the dead child lay partly behind the liver and was covered with omentum. The placenta was detached, the pelvis was fractured in several places, and there were two other non-perforating lacerations in the uterus. The child had suffered a fracture of the parietal bone and apparently had died immediately after the fall. The rupture of the uterus and the escape of the fetus into the abdominal cavity had not been diagnosed before death.

PROF. OLSHAUSEN (Berlin) exhibited a uterus removed by

HYSTERECTOMY FOR CARCINOMA

nine and a half years ago. Thus far this is the longest time that has elapsed since the operation without the occurrence of a relapse. Another specimen was

A UTERUS REMOVED FOR EXTENSIVE PROLAPSUS

complicated with prolapsus of the vagina, cystocele, and rectocele. A portion of the vagina was likewise extirpated.

EXTIRPATION OF THE PREGNANT UTERUS IN THE THIRD MONTH.

The patient on whom the operation had been performed was presented. She had suffered from pronounced osteoma-

lacia, the uterus was retroflexed, quite immovable, and the cervix inaccessible. Symptoms of incarceration were present, and puncture of the uterus from the posterior fornix had produced no effect. Olshausen therefore determined to remove the uterus, and the operation succeeded.

He presented another patient on whom he had performed

TWO LAPARATOMIES IN ONE YEAR FOR EXTRA-UTERINE
PREGNANCY.

The first child was fully developed, ten days before term; it lay free in the abdominal cavity and is still alive. About a year later the patient became pregnant in the tube of the opposite side, and when she came under operation after rupture of the tube she was almost moribund.

Prof. CALDERINI (Parma) presented specimens from

THREE CASES OF LAPARATOMY DURING PREGNANCY.

One was an ovarian tumor, the others were myomata of the uterus. The pregnancy continued in all the cases. A fourth case was a

MYOMA OF THE ANTERIOR LIP OF THE OS.

which completely filled the pelvis of a parturient and constituted an absolute obstruction to labor. Calderini performed version, as there was room enough to reach the feet of the child, and by energetic traction he succeeded in pulling the tumor out in advance of the child and removed it. The further course of the labor was normal.

In another case presented there was a

RUPTURE OF A UTERUS BICORNIS UNICOLLIS.

The patient was saved by the Porro operation.

VAN OTT (St. Petersburg) read a paper on

THE LAW OF PERIODICITY IN THE PHYSIOLOGICAL FUNCTIONS
OF THE FEMALE.

Aside from the nervous phenomena occurring in women at the time of menstruation, there are a number of alterations of normal functions which appear in typical and periodical

forms which the author has observed by the aid of intricate apparatus. In brief, the results of these observations show that the curves of the bodily temperature, of the blood pressure, of the muscular power, of the respiratory capacity, of the intensity of inspiration and expiration, of the excitability of the nerves (measured by the patellar reflex), reach their acme a short time before menstruation; but during the latter they sink below the normal. Parallel experiments made with old women and young girls, respectively after and before the child-bearing age, showed that the curves presented almost straight lines. Hence the numerous experiments and observations of the author demonstrate that the assumed wave motion of the female organism has passed from hypothesis into reality and stands revealed as a scientifically established law.

MAROCCO (Rome) exhibited some new

INSTRUMENTS TO FACILITATE TAMPONING THE UTERUS:

also, some new obstetrical and gynecological needles, and a new uterine canula.

PROF. FRITSCH (Breslau) showed a number of

UTERI REMOVED FOR EXTENSIVE PROLAPSUS OF THE UTERUS
AND VAGINA.

A portion of the latter was resected at the same time. The mode of operation has already been published.

THIRD SESSION, AUGUST 5TH, 11 A.M.

PROF. PÉAN (*Paris*) in the Chair.

JOHN WILLIAMS (London) read a paper on

VAGINAL HYSTERECTOMY.

He first considered the indications. As regards cancer of the uterus, the indications depend upon the size, the mobility, and the adhesions of the uterus, and also upon the extent to which the neighboring parts are implicated. He then discussed the question of hysterectomy in cancer of the infra- and supravaginal cervix, and compared the course of opera-

tive cases with those left to themselves, together with the prospective duration of life in such cases. He next considered the starting points of carcinoma, the direction of its growth in the affected tissues, and finally the further course of cases in which supravaginal hysterectomy had been performed. Carcinomatous disease is preceded by indirect changes in the mucous membrane; relapses occur in the parametrium. The result of vaginal hysterectomy is at present twenty-eight per cent of cures. Williams is in favor of a preliminary microscopical examination of portions of tissue in order to establish the diagnosis. Immobility of the uterus is a contra-indication. During the operation disease of the cellular tissue does not manifest itself in any manner. Cancer of the body of the uterus cannot possibly be diagnosed early.

The question whether the operation is indicated in cancer of the supra- and infravaginal portions of the cervix depends upon (1) pathological, (2) clinical factors. To the former belong (*a*) the earlier history of the carcinoma where nothing has been done; (*b*) its duration; (*c*) its point of origin; (*d*) the direction of its growth; (*e*) the tissues implicated by it. Here the question arises, whether the carcinoma attacks the body before it does the tissue around the cervix. Does it spread directly or from the tissue around the cervix? Furthermore, after supravaginal amputation, where does the relapse occur? Which is the direction of growth after the less energetic operation? Finally the author raised the question whether, in simultaneous occurrence of cervical and corporeal carcinoma in early stages without implication of the tissue around the cervix, this fact is to be explained by superficial extension, by secondary affection of the body, or by simultaneous occurrence at two points. He then considered the influence these views would have on the total extirpation of the uterus.

SCHAUTA (Prague) read a paper on

THE INDICATIONS FOR VAGINAL HYSTERECTOMY.

1. The principal indication for vaginal hysterectomy is always cancer of the uterus; but the limits of the indications have been changed materially in recent years. In order to

come to an understanding on this point, we must distinguish between the lower and the upper limit of the indications.

Formerly the lower limit was, and to some extent is still to-day, as Schröder determined it in his time. According to him, in canceroid of the infravaginal cervix, supravaginal amputation of the cervix is sufficient; only in the other forms, cervical and corporeal carcinoma, is total extirpation indicated. Later authors desire to see the lower limit rather more restricted; for they concede no advantage to hysterectomy above supravaginal excision of the cervix, not only in cancer of the infra- but even of the supravaginal portion of the cervix. The reasons for limiting the indications in this way are essentially anatomical; they are based on the mode of occurrence and extension of the morbid process according to its varying localization. No one will fail to appreciate the great value of these anatomical studies; still I believe that it is total extirpation in particular which has brought to light facts sufficient to prove that the arguments based on the anatomical mode of extension of carcinoma according to its varying location are not always to be depended upon.

To be sure, with reference to the earliest stages all these arguments seem to be correct; for more advanced cases, however, they are invalidated by the simple fact that in them the differentiation into infravaginal, supravaginal, and infiltrated carcinoma is no longer possible. If high cervical amputation is to be employed in those cases in which the cancer has not passed beyond the internal os, we must be able to determine the fact clinically that the degeneration in a concrete case has actually stopped short of the internal os. But it is with the microscope alone that we can certainly determine the limits of the morbid process; macroscopic examination will unfortunately deceive even the most experienced clinician.

But even in the earliest stages of carcinoma of the infra- and supravaginal cervix the stated anatomical modes of extension are not always met with. It is precisely the examination of many completely extirpated uteri that has demonstrated that in apparently strictly local disease of the cervix cancerous foci were present in higher portions of the cervix or of the body of the uterus. This fact remained unknown to the earlier operators, for, restricting themselves to partial excision, they

were able to interpret the proliferation of the cancerous foci, which they had unconsciously left behind in the upper portions, as relapses of the disease. Some years ago I called attention to several such cases, in my own practice and that of others, and to their bearing on the question of total extirpation. As I anticipated at that time, similar material has accumulated largely in recent years. Thus at present I can cite seventeen cases, three of which were under my own observation, which belong to the class of which Fritsch said at the time that a single one would decide the question, whether total extirpation or partial amputation should be done, in favor of the former.

In carcinoma of the infravaginal cervix, cancerous foci in the upper portions of the uterus, without any connection with the disease near the external os, were found in six cases, and in supravaginal carcinoma such isolated patches in the body of the uterus were present in ten cases. Even in primary carcinoma of the body the disease does not always respect the limit of the internal os, and cancerous foci occur also in the lower portions of the cervix, as was proved by two cases under my observation.

Finally, the fact must be emphasized that careful examination of extirpated uteri has demonstrated that in cervical carcinoma the uterine mucosa undergoes grave alterations in the shape of interstitial and glandular endometritis, as it does in myoma and oöphoritis. In all my hysterectomy cases the condition of the uterine mucosa was examined, and the above-mentioned inflammatory changes were almost invariably present. All the facts here given clearly indicate that in every case in which carcinoma has been diagnosticated total extirpation should be at once performed, lest valuable time be lost by partial amputation and the life and health of the patient be jeopardized. I would even go farther and say, the more localized the carcinoma the sooner should total extirpation be done; for these are the cases in which permanent success can be most certainly depended upon. I should be more willing to admit a doubt as to the method of operation in more advanced cases, for in these it is rarely that radical cure will be secured, whether the mode of operation be the one or the other.

II. As the lower limit of the indication for hysterectomy, then, in cancer I would place every case of uterine carcinoma, whether it be of the cervix or body, as soon as the disease is at all recognizable.

III. Partial amputation is to be altogether rejected for cases which presumably admit of the radical operation.

As to these questions, it appears to me there is hardly any doubt to-day among the great majority of German operators. It is altogether different, of course, with the upper limitation of the indications. Here two extreme views are to be noted. According to the one, total extirpation, if it can be done at all, should be performed in every case of carcinoma, even though the surgeon be convinced that he cannot operate in healthy tissue. On this point I would reply: In the first place, it is contrary to every rule of surgery to operate where all the diseased tissue cannot be removed. It is certainly questionable whether, as the advocates of this extreme view assert, life is really prolonged thereby, sloughing and pain diminished, and whether the moral impression of the operation cannot be effected in another manner. Obviously in such cases the operation must be far more difficult and dangerous; consequently the rate of mortality will rise, and life will be shortened in many cases in which we could any way give no lasting relief. Moreover, the cardinal symptoms of such forms of carcinoma, the sloughing, hemorrhage, and pain, can be controlled by curetting and cauterization. I am in the habit of employing for this purpose, after the curette, iodoform and charcoal powder in equal parts, and have observed a marked amelioration of the symptoms from this after-treatment. Hence I do not believe it likely that much favor will be accorded to the extension of the indication for hysterectomy to cases in which the radical operation is out of the question, as has been recommended by some authors. Even then we shall often enough operate in diseased tissue, though we believed and expected that it could be done in healthy tissue.

The above-mentioned extreme view, the advocates of which favor the operation in every case in which it is technically still feasible, even though it would not be radical, is opposed by another view according to which the operation is to be permitted only in cases in which there is absolutely no infiltra-

tion of the parametria and the carcinoma has not yet passed beyond the limits of the vagina. As to this mode of determining the upper limit of the indications, we must ask the question whether it is not too restricted. Is it really true that every infiltration of the parametria *per se* constitutes a contra-indication to the performance of hysterectomy? I should answer in the negative. How often we find inflammatory infiltrations, particularly in women who have passed through difficult labors and infections, and finally are attacked by carcinoma! I do not believe that we should so easily abandon the hope of saving such patients. Some of my own cases indicate clearly that carcinomatous and non-carcinomatous infiltration of the parametria should be differentiated. The decision whether an infiltrated streak in the parametrium is carcinomatous or not is purely a matter of personal experience. The infiltrations of the parametrium, as a rule, are more easily recognized *per rectum* than *per vaginam*; in a few cases combined examination from the rectum and the bladder has likewise done me excellent service. Profound narcosis is indispensable in such examinations, in which the inflammatory infiltrations are distinguished from the rigid carcinomatous ones by their yielding and elasticity. Moreover, inflammatory infiltrations, even when not of recent origin, are rarely extensive; while in carcinoma we find them as thick as a thumb and diffuse, filling the entire pelvis. Again, a preliminary curetting of the cancer has in many cases enlightened me as to the extent of the neoplasm, for in advanced cases beyond the limits of the cervix the curette enters carcinomatous parametric tissue.

This elastic and yielding quality of the cords is connected with another objective symptom of the operability of these cases—namely, the mobility of the uterus. But in this respect likewise some qualification is necessary. Mobility to a certain degree occurs also in inoperable cases when the infiltration affects only one side of the parametrium, and the uterus is movable around this side as a centre. Besides, the uterus may be uncommonly movable when the carcinoma has extended largely to the bladder or the cellular tissue between bladder and cervix, without touching the broad ligaments.

While we see on the one hand that mobility alone furnishes

no proof that the operation can be performed in healthy tissue—that is, that it will be a radical one—we must on the other hand allow some qualification for such cases in which the uterus is slightly if at all movable, where this diminished or abolished mobility is due, not to extension of the carcinoma to the surroundings, but to old inflammatory processes—for instance, adhesive perimetritis succeeding salpingitis or tumors of the adnexa. Should such patients be left to their fate because the uterus is fixed? I think not. From what we know of the mode of extension of cervical carcinoma, it is, above all, the parametria, the connective tissue around the uterine artery, and the so-called cardinal ligaments (Kocks) that are infiltrated. Hence, if these are found free and the cause of fixation lies higher up, it is very probable, especially if the examination shows the existence of salpingitis, that we have to deal with purely inflammatory processes which must not deter us from hysterectomy. If the adhesions are present only in Douglas' pouch, they can usually be detached through the vagina; but if the adnexa adhere together or to the rectum, omentum, and bladder, I would—as I have done in one of my cases—first perform laparotomy, sever the adhesions, extirpate the adnexa, make the uterus movable, and then complete the operation *per vaginam*.

If we wish to obtain a clear idea as to the upper limit of the indications for total extirpation in carcinoma, we must distinguish extension of the morbid process superficially and deeply. As we have seen, it is only the latter mode of extension that can contra-indicate the operation, but not superficial spreading. In one of my hysterectomy cases I extirpated almost the entire posterior vaginal wall excepting a remnant $1\frac{1}{2}$ cm. wide; in another case I removed both anterior and posterior vaginal wall, leaving only in front $1\frac{1}{2}$ cm., behind 3 cm. adjoining the introitus. Extension of the carcinoma to the bladder and rectum *per se* does not appear to me to contra-indicate the operation. If the parametria are free, combined examination from the bladder and rectum will show the extent of the disease in the bladder. Whether the operation will be undertaken in that event will depend on the relation of the ureters to the carcinoma and on the possibility

of covering the defect in the bladder ; general rules can hardly be formulated.

From these remarks we may deduce the following :

IV. As the upper limit of the indication for vaginal hysterectomy in carcinoma is to be considered that degree of extension into the depth in which the operation undoubtedly can no longer be performed in healthy tissue.

V. Superficial extension, whether upward or downward, even as far as the introitus, does not contra-indicate the operation any more than the implication of the bladder or rectum *per se*, but only the degree of implication of the neighboring organs.

VI. In the diagnosis whether an infiltration of the parametrium is carcinomatous or inflammatory, examination per rectum under anesthesia, and diagnostic curetting, are of great value.

Aside from carcinoma of the uterus, hysterectomy has been performed also for various other anomalies. I cannot here enter on the discussion of all these indications, which at times have more the character of an improvisation than that of a settled indication. I shall rather restrict myself to the consideration of those cases which under certain conditions may be looked upon as established indications.

VII. As such indications we may consider under certain conditions prolapsus, myoma, and recurring glandular endometritis.

I have operated for prolapsus altogether only six times. If these few cases are compared with the great frequency of prolapsus, it becomes evident at once that the indication has been formed with great care, and this is certainly necessary. For ordinary cases of prolapsus hysterectomy constitutes a too radical and too dangerous procedure, despite the diminishing rate of mortality year after year. For hysterectomy in prolapsus the following indications have been formulated : 1. Failure of other modes of treatment ; 2. Extreme senile atrophy of the pelvic floor. To these indications I would add : 3. Irreducible prolapsus on account of pelvic adhesions ; 4. Complication of the prolapsus with myomata of the uterus. To be sure, myoma *per se* furnishes in certain cases the indication for hysterectomy.

tomy; but when myomata give no trouble by their size, by pain, or by hemorrhage, they will hardly ever furnish an indication for operative measures. In combination with prolapsus, however, they may render other operations nugatory by the size and weight of the uterus, and prevent permanent reposition; in that event I believe hysterectomy to be indicated. When myomata unassociated with prolapsus give the indication for the operation by pain and hemorrhages, vaginal hysterectomy may occasionally come under consideration, provided the tumors are not too large. Thus far I have performed the vaginal operation four times in cases of myoma. Judging from my experience with these cases, I take the development of the body of the uterus to the size of a fist to be the upper limit of pure vaginal hysterectomy in myoma. It is well known that pure vaginal hysterectomy has indeed been performed in cases of larger tumors; but it was necessary, for the extraction of the tumor, to enucleate the myoma through the vagina and thus make the uterus smaller. I do not believe that such cases are suitable for vaginal hysterectomy. If this mode of procedure be intended, a preliminary operation for diminishing the uterus would be required—namely, laparotomy for the enucleation of the myomata as far as they are accessible, and by the aid of the elastic ligature. After the uterus has been sufficiently diminished, the elastic ligature should be allowed to remain and the operation completed per vaginam. I think that in this way the still open question as to the treatment of the pedicle of small myomata could be solved in a very simple manner.

Among the indications for hysterectomy attention should furthermore be given to endometritis, especially the glandular form. Many facts show that glandular endometritis is in numerous cases benign; in other cases, however, it loses its benign character by the tendency to rapid relapses, to hemorrhages, and finally to malignant degeneration. I have observed a number of cases in which an interstitial endometritis, originally benign anatomically, relapsed a short time after curetting of the uterine mucosa. The portions of the subsequently removed mucous membrane exhibited an altogether different character; a gradual transition to glandular endometritis, then into adenoma, and finally into carcinoma being

observed. According to these experiences, glandular endometritis appears to deserve careful consideration, and I believe that it is destined to take its place among the indications for hysterectomy. I do not mean to say that in every case of glandular endometritis hysterectomy should be immediately performed, but when, after thorough curetting, the same symptoms repeatedly recur in a short time, say within a year, and the examination shows fresh proliferations, I should not hesitate to propose hysterectomy.

The contra-indications have been partly enumerated in the discussion of the indications; it remains to mention the width of the vagina and pelvis as factors. A narrow, senile atrophic, or cicatricially contracted vagina may greatly hamper vaginal hysterectomy without contra-indicating it. Free division of the vaginal tube throughout its entire length—best toward both sides, since in the median plane the depth of the incision will find its natural limit too soon—will probably always give sufficient room. So far as I am acquainted with the literature, the influence of a narrow pelvis on total extirpation seems never to have been mentioned. I refer to those cases in which absolute narrowing of the pelvis keeps the uterus above the pelvic inlet and prevents its descent on the one hand, while on the other it hinders the passage of the hand and instruments to the highly placed organ through the contracted strait. I observed a similar case recently in a greatly contracted osteomalacic pelvis. Therefore, in view of these facts, aside from the degree of implication of the pelvic cellular tissue in carcinoma, an absolute contra-indication may exist in such cases of true pelvic contraction in which the uterus, owing to narrowness of the pelvis, can neither be drawn down nor reached from below.

Coming now to my own results, I have had among 65 operations 5 deaths—a mortality of 7.6 per cent. The first cases, of course, belong to the time when I was unfortunately led to make experiments, owing to the general uncertainty of the technique. However, not all the deaths are attributable to the operation itself. I believe that in the present highly developed state of the technique the mortality will be reduced to the same percentage which we may consider as secured in simple ovariectomy. In this connection I shall only

briefly mention that the method which has given me the best results is the one in which all the stumps are placed and fixed strictly extraperitoneally, and with complete closure of the supravaginal wound and of the peritoneal cavity. This is the method I shall hereafter follow.

For obvious reasons, the immediate results cannot be as certain as the final results of the operation. It must be emphasized at once that the present statistics, large as they may appear, are still insufficient for forming an opinion as to the permanent results of hysterectomy for carcinoma. Moreover, the time since the total extirpation has been first performed is far too short—it comprises barely one decade. My statistics show that if, following the usual custom, a case of carcinoma is considered as cured when two years have elapsed since the operation without relapse, I can claim 47.3 per cent of definite cures. But I am not so sanguine as to assume that all these cases will really remain cured. Although these results are by no means brilliant, they are not unsatisfactory. At all events I have succeeded in curing a certain number of women. While I do not wish to assert that these cures are definitive, this much is undoubtedly true, that with few exceptions I have gained for my patients months and even years of restored health, with the capacity for work and enjoyment of life. And even if in future it should appear that all patients operated upon for carcinoma finally relapse, still the present results as regards temporary prolongation of life alone will secure to hysterectomy its place in gynecological therapeutics for all time.

Pozzi (Paris) read a paper on

VAGINAL HYSTERECTOMY.

The article treated chiefly of the prognosis of the operation in presence of changes in the cervix. According to the latest statistics the prognosis is much more favorable than had been stated—40 to 50 per cent were cured. It is altogether impossible to tell by the patients whether the disease is limited to the cervix; no method of examination gives certain information on this point. On the whole, Pozzi is against supravaginal amputation. The bad results of many clinics

depend upon the defective formation of the indication. It is because the indications are formed with such difficulty clinically that frequently when the operation is performed the limits of the uterus have already been passed.

As to the technique of the operation the views have changed greatly. Inverting the uterus toward the end of the operation, in order to facilitate the ligature of the broad ligaments, has always been possible. It is very important to disinfect the cervix carefully before the operation; this is generally though not always feasible. In some cases the operation fails because this part cannot be properly disinfected. This gives rise to the danger of infecting the wound. Two cases have determined Pozzi to abandon this method of inverting the uterus. At the autopsy pyo-salpinx was found, which could not be diagnosed before the operation owing to the extension of the cancer to the cervix. Therefore the movements for the inversion must be restricted, the uterus should be simply drawn down and then be freed from the adnexa.

Should the adnexa be removed when they are healthy? If they are diseased they should be removed, for we have to deal generally with a purulent affection of the tubes, more often with polycystic affections which give rise to considerable pain. If they are healthy they should not be removed. For securing the ligaments two methods are in use: 1. Preliminary ligation (after Martin, the usual mode of procedure). This perfectly prevents hemorrhage, but is at times very difficult when the broad ligaments cannot be readily separated. 2. Systematic forepressure as a hemostatic measure. In exceptional cases this method may be useful; it is a procedure determined by necessity, not by choice. If ligation be possible, it is preferable, for the statistics of cases operated on according to the second method are bad. Forepressure acts also on the bladder. The pressure on the intestines has sometimes led to their laceration, occlusion, and adhesion. Moreover, it restricts the field of operation, and, in short, carries several dangers with it. Besides, this method is not indifferent to the tissues; necrosis and suppuration are very liable to result.

Pawlik's proposition to commence the operation with catheterization of the ureters is little practised. It is very difficult in cancer of the cervix, and is, besides, superfluous.

Pozzi also rejects the transverse perineal section proposed by Zuckerlandl. The field of operation is not made any more accessible by it, and when the uterus is large the procedure cannot be employed.

The author formulates the following propositions:

With reference to the indications: 1. Total extirpation of the uterus is to be performed whenever the cancerous nature of an alteration of the cervix is established. The sooner the operation is performed the better are the chances of an immediate success, as well as of a considerable prolongation of life.

2. Vaginal hysterectomy at the present day is hardly more difficult than amputation of the cervix, especially high amputation. Hysterectomy is to be preferred because of the impossibility of determining clinically whether the disease has passed beyond the upper limit of the cervix.

3. The operation should be performed only in cases in which the disease has not passed beyond the limits of the uterus. If this be the case, relapses occur very early and the operation is more serious. In that event palliative treatment (curetting and cauterization with the Paquelin) is indicated.

With reference to the operative technique: 1. In order to avoid infection of the wound the uterus should not be turned out.

2. Preliminary, gradually progressive ligation of the tissues in small portions is preferable to forcipressure. The employment of clamp forceps is an exceptional, systematic procedure, determined by special circumstances, not by choice.

Seizing the broad ligaments in clamp forceps entails the dangers of injury to the bladder, ureters, and rectum, later of ulceration of the intestines and after-hemorrhage. It narrows the field of operation and hinders the removal of the adnexa which is occasionally necessary (pyo-salpinx). Finally, it prevents proper antisepsis by the necrosis of the tissues included in the bite of the forceps.

OLSHAUSEN (Berlin).—As to the indications, their limits have probably varied in all operations. As to the technique, four stages must be kept apart: 1, circumcision of the

cervix ; 2, freeing the cervix from its attachments with fingers or knife handle ; 3, ligation of the ligaments ; 4, treatment of the wound after extirpation. Little is to be said on the first point. In carcinoma of the vaginal portion of the cervix it is good practice to remove as much as possible of the vagina. In cervical carcinoma which has not yet attacked the vagina, the latter need not be cut around extensively, for this form does not relapse upon the vagina. This is proved by all experience, especially the reports of Hofmeier. The relapses occur above the sutured vagina. Furthermore, the suturing must be rapid, and there should be but little ligaturing. It is hardly ever necessary to do much ligaturing unless one of the larger arteries spurts. Experience shows that a profuse venous hemorrhage usually ceases after a single mass ligature of the ligaments ; therefore little heed need be given to the hemorrhage unless it be arterial. Some would divide the ligaments first, but that is comparatively unimportant. Special stress, however, must be laid on the fact that one must carry the separation high up between bladder and uterus before the broad ligaments are ligatured in going upward ; in this way injury to bladder and ureters is avoided. Previous sounding of the ureters is, therefore, unnecessary. I have long been of the opinion, and have said so before, that the uterus should not be everted, for the reason stated by Pozzi — on account of the greater danger of infection. I have done it in only one case, where it could not be avoided. The operation should be done *in situ*, that is to say, the uterus should be drawn down. The operation is facilitated if the lower portions of the ligaments are ligated from Douglas' pouch, according to Fritsch. For this purpose Douglas' cul-de-sac is opened instead of being blindly pierced with the needle. Then one is sure that the entire base of the ligaments is secured, the needle used being curved and not sharp. After placing the last ligatures, first one and then the other is disposed of. The material for the ligature is of no consequence. I use catgut. Four to five ligatures are used for each ligament.

Olshausen has dropped his pedicles and closed the vagina below the stumps ; this he has done in twelve cases. One of these died, the others recovered, not all without accident, for

some had abscesses and fever with perforation of the abscess into the vagina and rectum. The dropped pedicles, therefore, may cause suppuration, which occasionally may reach the abdominal cavity; but this should not frighten us, only the procedure must be still further perfected. In a large number of the cases the vagina in the speculum appeared normal, with a smooth cicatrix three weeks after operation. Of 512 cases of carcinoma, 163 underwent the radical operation during the past year, that is, 30 per cent; mortality, 14 per cent. The indications for the operation were very liberal. Nearly one-half (19 out of 40) are now, after two years, free from relapse. Of 56 cases of vaginal hysterectomy performed between 1880 and the beginning of 1887, 6 are still certainly free from relapse; perhaps not all of the others have died of carcinoma. Three were operated on three and one-half, four, and seven years ago, 2 more than eight years ago, 1 nine and one-half years ago. Six among 56—that is an incentive to continue in the operation and its improvement. And still we are in the first period of total extirpation.

Olshausen summed up with the following conclusions:

1. Vaginal hysterectomy in cancer of the uterus and in some cases of other diseases is often a beneficial operation, which should not be abandoned.

2. At present, owing to the lateness in forming the diagnosis of carcinoma, it is applicable only in the minority of cases.

3. The primary results must differ according to the limits accorded to the contra-indications. Still, even if the limits of the indications be liberal, the mortality may be reduced to 10 or 15 per cent.

4. The final results—that is to say, the permanent cures—are of course far more unfavorable; but an earlier diagnosis and operation will secure better results in the future.

5. Patients who are not radically cured suffer less after the operation than patients not operated upon; this is due to the absence of hemorrhages and discharges. Exceptions to this rule occur.

6. Relapses rarely occur in the vagina, more commonly in the parametria or in the abdominal organs.

7. As to the mode of operation, vaginal hysterectomy is

best for the great majority of cases. It cannot be superseded by the sacral, parasacral, or perineal section. Only in isolated cases, where the neoplasm has largely implicated the vagina, the perineal section (Zuckerlandl) may possibly be preferable.

8. As to the technique of vaginal hysterectomy, the following rules are to be recommended: Careful preliminary disinfection of the carcinoma. The widest possible circumcision of the carcinoma in the vagina. Rapid bloodless freeing of the cervix, with the greatest possible limitation of the ligaturing of vessels. Opening of Douglas' pouch before the first mass ligature is applied; application of the first mass ligature for the first broad ligament from Douglas' pouch. The side most seriously affected is to be ligated last. After removal of the uterus, the peritoneum and vagina should be closed by sutures, if possible catgut only, the pedicles being dropped. In this way recovery is simplified and healing is almost entirely by first intention.

L. LANDAU (Berlin).—No single method is so generally applicable as the one for which we are indebted to Péan and Richelot—that of forcipressure. I have tried the other, too, but the experience with the new one is so incomparably better that I shall not give it up. It can be performed in an incredibly short time. This uterus [specimen shown] I have removed this morning in this way in six and a half minutes, although the case was one of those which could not be operated upon at all with ligatures. Indications can be met with this operation which could not be met by the other; even fixed uteri can be removed by it. I do not think it at all unsurgical to operate in diseased tissue; for it is not unsurgical either to scrape out a carcinoma. I employ total extirpation of the uterus wherever it is technically still feasible, in the one case with the hope of radical cure, in the other symptomatically, as I would use the cautery or any other measure. The objection that we cannot grasp the ligament by forcipressure as far as we can with the ligature is void of force. Leopold, who raised this objection, has never practised this method. On the contrary, we can get further into the broad ligament with it. The forceps is gradually passed higher and higher along the finger.

SLAWJANSKI (St. Petersburg) reported on the favorable results obtained with the operation in Russia, the majority having been performed in Moscow. The age of the patients ranged from 23 to 65 years. The method of operation was first that of Schroeder, then that by which the uterus is gradually drawn down. Duration of the operation, up to three hours, average one hour. The wounds are closed by suture, drainage is used, and the vagina is tamponed with iodoform gauze. Drainage after the method of Billroth-Mikulicz was preferred. When tampons were employed fever was observed, but it generally sank with their removal. Relapses occurred in 43 cases, the latest of them after eighteen months; one case has remained free from relapse for seven years. We may consider as cured those who have remained free from relapse for from two to three years; 12.6 per cent died in consequence of the operation. Among the first 40 cases there were 7 deaths; among the next 40, only 2 per cent. Bad results are traceable to an injudicious selection of the cases and defective technique. Excluding these factors, the operation is not dangerous.

Recapitulation.—Vaginal hysterectomy has gained a firm foothold in Russia; with modern antisepsis and technique it may be considered as void of danger. Statistics prove that the best methods of operation are those of Schroeder, Fritsch, and Martin, because they permit the desirable removal of the ovaries. If the vaginal operation be impossible, Kraske's method should be used. The surgeon generally has to deal with advanced cases of the disease. Even in the neglected cases the operation should be done, for, though relapses may occur rapidly, the subjective well-being of the patients is secured by it.

A. MARTIN (Berlin).—As I am counted among the first who have performed the operation after Czerny, this alone would induce me to say something about my experience, but now I feel all the more impelled to do so because I had reported my final results at Washington up to that time. The indications are not limited to carcinomatous uteri, but include also other neoplasms. We must gradually come to the point of performing the operation in cases where every other mode of treatment has failed, and large losses of blood and

other troubles extending over years have reduced the patient and made it impossible for her to enjoy life. I am convinced that as we have extended the indications in other fields, so it must be in this. It is of little consequence how the uterus is removed. I have opened the posterior fornix and at first ligated with silk and later with catgut. I am well satisfied with the method. I have not seen any great advantage in forcipressure. No rule can be formulated for inverting the uterus; each case is a law to itself. Sometimes it is impossible to get into the free abdominal cavity, but instead I have been able to open the vesico-uterine excavation and bring the uterus down from above. Formerly I was in favor of drainage, but have changed my mind since then. The drainage tube can no longer be introduced on account of narrowing. Iodoform gauze for drainage is no longer employed; it has given bad results in my hands. I close the wound. This was the outcome from a number of cases in which the hemorrhage continued from the stitch canals, sometimes into the vagina, sometimes into the pedicle. This furnished an imperative reason for closing the wound. In the first and second weeks I have often observed the expulsion of small shreds of ligated tissue, after which the recovery proceeded promptly. This is of no importance and has no influence on the mortality. Observation of the patients for two years is not sufficient—not until the lapse of three years can we speak of cure. It is particularly the ovaries that have proved at fault after two or three years. In regard to the final results no further statistics can be given, since the operation is still too young. This operation will always maintain its proper place among gynecological procedures.

KALTENBACH (Halle).—The differences are more apparent than real. The operation should be done only when the ligaments permit the drawing down of the uterus. We then remain always at the recognizable limit of the disease, for the true limit cannot be ascertained. No blame attaches to any one for a relapse; twenty-nine to thirty per cent of the cases can be subjected to the attempt at radical treatment. Against partial resection or osteo-plastic resections I have already expressed myself. They expose the field better, but we can go no farther than in the vaginal method. If I could be con-

vinced that after total extirpations relapses are by no means more rapid than after palliative treatment, I should certainly reduce the indications for hysterectomy. Some cases last for three or four years after palliative treatment, but they are rare exceptions. They are cases of very old women in whom carcinoma occasionally progresses slowly, where old cords are present in the ligaments. But, to repeat, they are exceptional cases. As regards the method, what I believe to be the most important, and what has been touched upon but incidentally, is the closure of the peritoneum. I think it is a fundamental condition for success that the peritoneal wound be closed. From my first operation I have always closed the open wound completely. I am well satisfied with the results. I cannot reconcile myself to drainage of the abdominal cavity. There is nothing there to be drained. With sponges on holders we can dry everything there before closing. One of the most important points is to keep the dangerous supravaginal wound everted toward the outside. The peritoneum must be shut off from the vagina with its germs. Intoxication is also prevented from the dressing material. We can certainly control hemorrhage and sepsis; whence, then, comes the difference in the mortality of various operators? From leaving open the peritoneal wound, from the penetration into it of toxic substances. Cases of ileus have occurred when the peritoneum has been left open. Among eighty total extirpations Kaltenebach had only two deaths. The statements as to the freedom from relapses are not always to be depended upon. The so-called rheumatic pains, thrombosis of the crural vein, are signs of relapse.

DUEVELIUS (Berlin) expressed himself in favor of vaginal hysterectomy.

KELLMANN (New York) spoke in favor of the earliest possible operation of all ulcers of the infravaginal cervix, since malignant diseases may spring from them.

CZERNY (Heidelberg) pointed out that carcinoma is a field on which investigation, surgery, and gynecology may co-operate. For the progress of this method we are indebted mainly to the International Congress. In London, Martin had first touched upon the subject, and all had different views then. To-day all nations are in harmony on the subject. The discus-

sion concerns only secondary questions. Czerny has performed the sacral extirpation three times. In this way the parametria are better exposed and topographical palpation is easier than from the vagina. This point will be left for future discussion. In cases in which the parametria are implicated the sacral operation should be performed.

FRAENKEL (Breslau).—In one case a relapse occurred after eight years. The patient was 34 years of age; the vaginal portion of the cervix had been amputated by the galvano-cautery, and the patient recovered and actually became florid. At the point of amputation there was a granulating surface which would not close. The patient had recently died of carcinoma. This case may serve as a contribution to the question whether amputation or total extirpation should be performed. If I had performed hysterectomy, the patient would not have had a relapse, for it was a local relapse. Therefore even in quite limited cervical carcinoma hysterectomy is indicated.

PÉAN (Paris) again described the four phases of his operation with clamps: 1, loosening; 2, clamping of the broad ligaments; 3, the clamps remain for forty-eight hours, then, 4, they are slowly removed without tearing. After that irrigation three times daily with sublimate solution. Péan has thus far treated sixty cases in this manner. He then referred to the method he had proposed thirty years ago for deep-seated tumors—that of morcellement. With this method tumors heretofore inoperable could be easily and successfully removed.

FOURTH SESSION, AUGUST 5TH, 3 P.M.

PROF. SIMPSON (*Edinburgh*) in the Chair.

SCHATZ (Rostock) read a paper on

THE CAUSES OF THE ROTATION OF THE FETAL HEAD AROUND THE AXIS OF THE PELVIC CANAL.

The question of the rotation of the fetal head was first thoroughly discussed one hundred and fifty years ago by Naegele. Nevertheless the reasons are far from clear. The causes of

the rotation have been assigned in turn to all the hard and soft parts of the pelvis, and still these explanations do not suffice. Hildebrandt thought that the slit in the levator ani was the cause of the rotation; J. Veit ascribed the phenomenon to the obturator and pyriformis muscles. Both views are incorrect. The inclined plane formed by the lower part of the sacrum with the upper has also been falsely given as the cause. The view recently advanced by Laas, that the cause is to be sought in the pressure on the spinal column of the fetus, is equally untenable, for this would never produce rotation. Schroeder taught that the rotation of the head is produced by that of the child's body, which latter is the consequence of the flattening of the uterus after the discharge of the liquor amnii. This, too, is incorrect, since the rotation of the head is greater than that of the trunk. Schroeder is right, however, in so far that the first factor is to be sought, not in the pelvis and its soft parts, but higher up. Schatz explains the mechanism of rotation in the following way. The obstetric normal pelvis has by no means the form of the Caucasian race; on the contrary, after the removal of all the unevennesses the pelvis must be looked upon as a canal of circular form, so curved that its planes of entrance and exit are placed at a right angle to each other. The deviation in this form caused by racial variation is equalized by the moulding the fetal head admits of. The head is to be considered mechanically as oviform. An oviform body propelled through a narrow canal places itself with its long axis synagonal to that of the canal. What causes the rotation? This is the consequence of the eccentric insertion of the spinal column at the head. This eccentric attachment holds the head back, thus effecting its rotation. So long as the uterus is shorter than the compressed ovum within it, the power of restitution of the uterus manifests itself as a propelling force. As soon as the uterus becomes narrower and longer, it is larger than the length of the child and its power of restitution disappears and even becomes negative, for the uterus retracts along the child, so that the fundus is higher than the breech. Consequently the head is held back on one side, and, owing to the eccentric insertion of the neck, so turned that the retained portion faces forward. Schatz was able to demonstrate by

the introduction of tocodynamometers that the power of res-titution becomes negative.

ZWEIFEL (Leipzig) read a paper entitled

CONTRIBUTIONS TO THE DOCTRINE OF THE MECHANISM OF LABOR,
illustrated by drawings from frozen sections of parturient women. He, too, is of opinion that the cause of the rotation of the head is not to be sought in the rotation of the trunk.

FEHLING (Basle) demonstrated on frozen sections the mechanism of the first and second rotation of the fetal head. The preparations showed very clearly the vesico-uterine and utero-rectal excavations as distinct spaces.

J. VERT (Berlin).—There is no mechanism of the pelvic inlet in primiparæ. Depression of the occiput cannot result from the exertions of labor; it is only increased during parturition, but it was present before. For this reason I cannot recognize any mechanism in the first rotation through the pelvic inlet.

ZWEIFEL (Leipzig).—We are not dealing with a contracted pelvis. In primiparæ the head certainly is in the pelvis, but it stands much higher than is usually believed after ordinary palpation; it stands with its greatest diameter over the pelvic inlet.

BALANDIN (St. Petersburg).—There are two kinds of pelves—one in which the conjugata lies high, the other in which it lies low. The pelvis shown by Zweifel is not a normal one. Under normal circumstances the conjugata never lies as low as that. Where the conjugata lies low we certainly have a mechanism at the pelvic inlet. As to determining the normal pelvis, we are in a bad way: we do not know what is normal; all the measurements are inaccurate. Authorities differ: what one calls normal another calls abnormal, and thus there is no recognized standard.

PESTALOZZI (Pavia, Italy) read a paper entitled

GRAPHIC DELINEATION OF THE FETAL PULSE IN THE MATERNAL UTERUS.

He exhibited several cardiograms which he had obtained in a case in which the fetal heart impulse was visible and palpa-

ble through the maternal abdominal walls. It was a twin pregnancy, one fetus presenting by the head, the other transversely. The cardiac impulse corresponded by auscultation with the heart of the second fetus. These cardiograms, which are perhaps unique, are of some importance, since they show that the systolic elevations of the fetal heart curve are little if at all influenced by the pains, either in frequency or in volume. The membranes of the second fetus, which was used for cardiography, were still unruptured.

SKUTSCH (Jena) read a paper on

PELVIMETRY.

He has invented an instrument for measuring all, even the transverse, diameters of the pelvis. The measurement is made both from within—that is, from the vagina—and from without.

In the discussion of this paper it was pointed out that direct pelvic measurement is of little practical importance; it is very painful for the woman, and many refuse to submit to it. The measurement must often be made under anesthesia. In order to get a good idea of the pelvis it is not enough to determine the antero-posterior diameter, but the transverse must be known likewise.

KUESTNER (Dorpat) read a paper on

THE ORIGIN OF AMNIOTIC BANDS.

Intra-uterine amputations are effected by amniotic bands. Gustav Braun has demonstrated that it is not the funis but amniotic bands which cause this accident. These bands (called after Simonard) are due to early adhesions of the fetal surface with the amnion, but other factors also exert an influence. Kuestner reported a case under his own observation, a IIpara of the Esthuanian race. The first labor had been normal; the second pregnancy dated from March, 1889. In the third month there was a rather profuse hemorrhage, but the pregnancy continued. Labor set in in February of the present year; the child was active and was born spontaneously. Amputations were found on nine fingers and on the two great toes. The cicatrices of these amputated portions were quite

white and smooth; only here and there small granulating surfaces were still covered with fresh crusts. A small cord extended from one edge. The placenta appeared to be normal—weight 800 or 900 gm.—but it lacked the peculiar lustre on the fetal surface. The attempt to separate the chorion from the amnion failed; the two membranes could not be separated at any point. There were some false knots at some distance from the insertion of the cord. Some peculiarities were noticeable at the placental point of insertion. It was enveloped in a strange membranous sheath to a height of about two or three centimetres, along which ran some folds in a spiral direction. At its upper end it terminated in a fine thread several centimetres in length, having at its extremity a small grape-like formation with several berries. The microscope showed decidua, chorion, no connective-tissue layer of the amnion, no epithelium on the amnion. It was evident that the entire inner surface of the ovum was completely void of its amniotic investment. It will hardly be wrong to assume that the above-mentioned membranous sheath represents the amnion. But as this envelope was comparatively small, and would not suffice to cover the internal surface of the ovum, it must be an amnion from an earlier period. A hemorrhage had occurred in the second or third month of pregnancy. Kuestner believes that it ruptured at that time and curled up; the amputated extremities belong to a much earlier fetal month, because strangulation had rendered further growth impossible. The bands will show knots, according to Kuestner's opinion.

J. CHALMERS-CAMERON (Montreal) read a paper entitled

SOME FURTHER OBSERVATIONS ON THE INFLUENCE OF LEUKEMIA
ON PREGNANCY AND LABOR.

In one of these cases Chalmers had carefully counted the blood corpuscles. His figures are the average of three counts. Three months after delivery the number of red corpuscles in the mother was 2,400,000; relation of the white to the red corpuscles, 1:40. Eight days later, 2,900,000; 1:17. Seven months later patient was again one month pregnant. The figures then were, 3,400,000; 1:50. Delivery at the end of the seventh month. The figures two hours after labor were,

990,000; 1:4. Ten days later, when patient was discharged, 1,900,000; 1:35. Eight months later another count was made, when patient was two or three months pregnant—result, 1,406,000; 1:20; between the third and fourth months, 1,373,000; 1:3. On the morning after delivery at term, 2,100,000; 1:39. Five days post partum, 1,970,000; 1:30. Eighteen months later, 2,300,000; 1:28. Two years and eight months after the last delivery, 4,000,000; 1:200. The first child had two hours after birth 5,210,000; 1:175. In the trunk of the umbilical vein, 4,610,000; 1:173; in one of its branches, 4,600,000; 1:128. In the umbilical artery, 5,410,000; 1:270. In the placental sinus, 950,000; 1:36. The last four statements refer to the time eighteen hours after expulsion. Two days later, mother (two days previous, 990,000; 1:4), 1,100,000; 1:20; child, 5,000,000; 1:150. At the second delivery, mother in the morning post partum, 2,100,000; 1:39. Child in the morning after birth, 6,600,000; 1:330. Umbilical vein, 5,150,000; 1:300; artery, 6,340,000; 1:350. The last two figures refer to the time twelve hours after expulsion of the placenta. Four days later, mother, 1,970,000; 1:30; child, 6,520,000; 1:325. Finally Chalmers reports the result of a count in a number of leukemic children 6 to 18 years of age, some of whom were observed for years. In one case the number of red corpuscles rose in the course of five years from 1,912,000; 1:15, to 3,930,000; 1:150. In other cases the figures were similar. In the case of a boy aged 15, the number remained stationary for three years.

NEUGEBAUER, SR. (Warsaw), read a paper on

THE TREATMENT OF CHRONIC INVERSION OF THE UTERUS BY
HYDROSTATIC PRESSURE.

The patient was 21 years of age, had never been ill in childhood; married at 18; had a living child in June, 1883. Course of labor good; placenta did not come away. Great pain, profuse hemorrhage. Condition remained stationary for some days; retention of urine; no passage from the bowels. Five days later a physician was sent for. The bladder was much distended; a catheter was introduced and laxatives pre-

scribed. Defecation did not occur until five days later, when it was profuse and attended with great pain. Besides, something protruded from the vagina—it was the uterus, which was repositied by a woman. Patient improved a little, but remained very weak, and the hemorrhage continued. Five weeks later she felt better and began to nurse her child. The latter died at the age of eleven weeks. The hemorrhages still continued. I took a colpeurynter four and a half inches in diameter, with a long tube and stopcock at the end. At first eighteen ounces of water were forced in. The patient then was unable to pass urine and the instrument had to be removed the next day. Much mucus was discharged, with a slight admixture of blood. The following day 270 gm. were forced in. The third day hemorrhage (menses?) for two days. When it had ceased the colpeurynter was again introduced. The uterus at the same time became remarkably soft; subsequently the quantity of water was increased still more. About nine days after commencing the treatment Neugebauer removed the colpeurynter, and the uterus was found in its normal position. The os uteri was much dilated, measuring over two inches; the cervical canal was a wide funnel; the uterus was in good condition, as shown by the sound, and not painful. Thus far Neugebauer has quickly and successfully treated ten cases in this manner, which is not often employed.

FIFTH SESSION, AUGUST 6TH, 8 A.M.

PROF. A. MARTIN (*Berlin*) *in the Chair*.

B. S. SCHULTZE (*Jena*) read a paper on

RECORDING THE RESULTS OF GYNECOLOGICAL PALPATION.

A number of blanks were exhibited, intended for recording the results found on gynecological palpation. The author pointed out the advantages derived from careful recording of the results of the examination. He had had made three engravings representing a transverse, a vertical, and a sagittal section of the pelvis. From these cuts a number of rubber stamps were made, which were shown in the exhibition hall of the Congress. In this form they are appropriate for every physician's use.

E. CUTTER (New York) exhibited a

STEM PESSARY

for the treatment of prolapsus of the ovaries. The instrument is said to have proved effective in all cases, and consists of an ivory intra-uterine stem slightly shorter and thinner than the uterine cavity. This stem is movably attached to an S-shaped part which rests in the vagina, and whose lower curvature likewise can be altered and rotated. The whole instrument is fastened to a bandage to be worn like a T-binder.

THOMAS MORE MADDEN (Dublin) read a paper on

THE TREATMENT OF OBSTRUCTIVE DYSMENORRHEA.

In the recognition of obstruction from cervical stenosis as the chief cause of dysmenorrhea, will be found the key to the pathology and successful treatment of this condition in the great majority of cases. Thus in my hospital practice during the past twenty years, nearly eleven per cent of sterility similarly caused has come under observation in a total of nine thousand gynecological cases. Of all the ailments of female existence, few give rise to more persistent suffering, or produce more disastrous effects on the general health, and even on the cerebro-nervous system, or on the moral constitution of the patient, than does well-marked obstructive dysmenorrhea. The latter consequence is more especially evident in many cases of alcoholism, which in women may very frequently be dated from their first painful menstrual period, for the relief of which stimulants are too often improperly administered and repeated in increasing doses, until finally, in many cases, the victim of dysmenorrheal alcoholism becomes an habitual and, perhaps, an incurable drunkard.

It is not my purpose here to refer to the successive improvements which have been effected in the methods of carrying out the gradual dilatation of the cervical canal since the introduction into practice by Simpson and Sloan of sponge tents or laminaria bougies for this purpose. No greater improvement has occurred in our branch of surgery than the replacement of these oftentimes unsatisfactory, possibly hazardous or even fatal, and always painful procedures by the more effective means now at our disposal for the rapid expansion of

this canal. Of these, perhaps the best known and most generally employed are either Hegar's, Duke's, or Lawson Tait's dilators. I now desire to call attention to another instrument which I have designed for the same purpose, and which, I venture to hope, may be found to supply a want still recognized by the gynecologists—namely, that of a reliable and effective means of securing the rapid and permanent dilatation of the cervical canal in the treatment of stenosis giving rise to the morbid conditions now under consideration. This instrument differs from other dilators in several respects, and, above all, in one which I consider most important, viz., in producing expansion of the canal from within outward—in other words, in imitating the natural process of expansion from the uterine cavity downward to the os uteri; whereas most other dilators, such as Hegar's, etc., act in the opposite direction. In my own hands the utility of this instrument, the expansion effected by which may be measured by the affixed index, has been fully tested in a very large number of cases of sterility and dysmenorrhea in hospital and private practice. I may add that my dilator, which does not occupy more room than the ordinary sound when introduced, may also be used with advantage for the dilatation of the female urethra in many cases in which this procedure is indicated.

A. W. FREUND (Strassburg) exhibited some

PREPARATIONS OF PELVIC TISSUES

made by his father, Prof. Freund, of Strassburg. These preparations were well and favorably known; they consist of preparations of normal and pathological conditions of the pelvic connective tissue, such as acute parametritis, parametritis atrophicans, echinococcus of the connective tissue, and tumors of intraligamentous development. The preparations show the great extent of the connective tissue at both sides of the uterus, the small connective-tissue spaces in front of the uterus between that organ and the bladder, behind the organ between it and the rectum and vaginal vault. They show, furthermore, that tumors of intraligamentous development can arise only if the original tumor germs were situated from their inception in the connective tissue, and had continued their development there.

G. EDEBOHLS (New York) exhibited

A SELF-HOLDING VAGINAL SPECULUM,

for examinations and operations in the dorsal decubitus. The instrument is of the Sims pattern and adapted to the dorsal position. The speculum, at the end directed toward the uterus, is sharply pointed downward, so as to be self-retaining. The handle is a strong tube which carries off the antiseptic fluids used during the operation, and the blood. A pail is attached to the tube and receives these fluids.

AN IMPROVED ANTISEPTIC LOCK FOR SURGICAL INSTRUMENTS,

adapted to needle holders and other forceps. He also showed a model of an

ANTISEPTIC LAPARATOMY TABLE,

with improved construction for the drainage of the irrigation fluids. It consists of a metal frame and a glass plate. At the point corresponding to the abdomen of the patient the plate rests on a second, slightly excavated plate of metal which has an opening in the centre. The idea is that the fluids of the operation should readily run off into the second metal plate, and thence into a pail, so that the patient should not become wet.

MACKENROTH (Berlin) showed a number of gynecological specimens derived from operations performed by A. Martin, of Berlin. Most of them were preparations of tubes and extra-uterine pregnancies.

KALTENBACH (Halle) exhibited a number of gynecological specimens, all of them exceedingly interesting and rare; seven cases of

HYSTERECTOMY FOR SARCOMA.

In four of the cases the disease had affected the cervical mucosa; in three, the body of the uterus. An interesting fact is that in one of the cases a hydatiform mole had preceded the disease. Kaltenbach pointed out that there may be some causal connection between the two conditions, that perhaps remnants of the mole, of the chorion in myxomatous degene-

ration, had lodged in the uterine wall, where they led to the development of the sarcoma.

ROUTH (London) exhibited some pessaries and other gynecological instruments constructed by him.

SABATIER (Lyons) showed

A PELVIS WITH DOUBLE SACRO-ILIAC SYNOSTOSIS,

though there was no narrowing of the transverse diameter.

BROESE (Berlin) showed several

ELECTRICAL APPARATUS,

the current being supplied by dynamo-electrical machines. The author has occupied himself for some time with the effects of electricity in gynecology, and in connection with the engineer Hirschmann he has endeavored to employ the current supplied by the Berlin electrical stations for medicinal apparatus. As the tension of the current amounts to 105 volts, a constant resistance for the regulation of the current is introduced in the shape of a rheostat, and a second rheostat is supplied for the purpose of regulating the transition of the current into the human body. The first rheostat can furnish a maximum current of 20, 50, 100, 200, and 500 milliampères; the first two currents serve for electro-therapy, the others for electrolysis. The apparatus contains besides a vertical galvanometer and an induction coil; finally, by the introduction of appropriate resistance it can be used also for galvanocautery.

SIXTH SESSION, AUGUST 6TH, 3 P.M.

PROF. SLAWJANSKI (*St. Petersburg*) in the Chair.

THOMAS MORE MADDEN (Dublin) read a paper on

THE TREATMENT OF CYSTITIS IN WOMEN.

Of all the diseases which come before us in gynecological practice, there is none more frequently met with, more distressing in its effects, or more intractable to the means generally relied on for its relief than cystitis in women. The measures most commonly employed in such cases are merely

palliative, and may relieve, but *per se* can never cure well-established cystitis. Nor am I aware of any method by which that can be accomplished save by giving the bladder absolute physiological rest. For this purpose Dr. Emmet's operation, *i.e.*, the establishment of an artificial vesico-vaginal fistula, may be successfully employed in some instances, but the practical objections to it are so great and obvious that for several years past I have abandoned this procedure in favor of another which I have found more generally effectual, and quite free from the disadvantages of the operation referred to. The plan which I have now employed in a very large number of cases of cystitis in the gynecological wards of the Mater Misericordiæ Hospital, Dublin, consists firstly in the full dilatation of the urethral canal with the instrument exhibited, so as to paralyze the contractility of the sphincter vesicæ and canal, and thus produce a temporary incontinence of urine; and, secondly, in the direct application, through the same instrument, of glycerin and carbolic acid to the diseased endo-vesical mucous membrane. I may add that any pain thus caused may be prevented by the previous topical application of a solution of cocaine, and that the procedure recommended seldom requires to be repeated more than once or twice at intervals of a week or ten days, and, combined with the internal use of boric acid, rarely fails to effect a rapid cure in any ordinary case of female cystitis.

THEODOR LANDAU (Berlin) read a paper on

THURE BRANDT'S METHOD OF EXAMINATION,

which he recommends because it enables us to dispense with a gynecological chair, and because it does not exclude other auxiliaries of the examination, especially if instrumental. He lays special stress on the fact that it facilitates the diagnosis materially in myomata, in hematocele, and in tubal diseases.

DOLÉRIS (Paris) read a paper on

THE PHYSIOLOGICAL AIM IN GYNECOLOGY; THE NECESSITY FOR
CONSERVATIVE TREATMENT.

He emphasized the necessity of being conservative as much as possible in gynecology, since the ultimate aim of the treat-

ment must ever be to preserve the sexual activity of the female.

DOEDERLEIN (Leipzig) read a paper on

SIMPLIFIED MASSAGE TREATMENT FOR RETROFLEXION OF THE
UTERUS.

Though the author is an advocate of Thure Brandt's method, he finds the treatment, especially of retroflexion, so complicated that he has simplified it. Brandt's treatment in cicatricial contraction and fixation of the uterus consists in sacral percussion, massage of the body of the uterus, massage of the ligaments, lifting of the uterus, pressure on the nerves, together with general Swedish gymnastics. Doederlein has performed only circular frictions of the uterus in the lateral decubitus, then masséed the uterus in such a way that while the cervix was drawn backward the corpus uteri was brought forward. Within two to four weeks the tone of the muscles had risen so much that of six cases four were permanently cured.

REIN (Kiev) read a paper on

ANTISEPSIS OR ASEPSIS IN LAPARATOMIES.

In order to attain the end of the modern wound treatment—keeping the wound sterile—the following points are to be recommended:

1. A single sterilization of the dressings, ligatures, etc., by ordinary steam at 100° C. is insufficient, because the microbes and their spores are not all killed. Certain, however, is compressed steam at 110° to 119° C.

2. Only sterilized water must be used.

3. Sterilization of the air is necessary. It is best effected by filtering the air through cotton in the afferent ventilating channels, and by wetting the air with powerful sprays of water.

4. For cleansing the wound, sponges, and instruments, weak antiseptic solutions are to be used.

Rein has made a number of bacteriological examinations, and has found that in the way stated the air in the operating room can be rendered completely free from germs. In most of his cases the wounds were kept aseptic and free from

fever. Rein thinks it is not correct to divide modern wound treatment into asepsis and antiseptis. Everything that comes in contact with the wound must be put in a sterile condition. As long as the method of asepsis is still incomplete, antiseptics cannot be altogether dispensed with.

SAENGER (Leipzig) read a paper on

DRAINAGE IN LAPARATOMY.

The views here advanced are shared by few persons in Germany or Russia; but I know, on the other hand, that I have many adherents in England and America, among whom are the most representative men in gynecology. Drainage of the abdominal cavity in laparatomy has at present few friends in Germany, and least of all in Berlin. Since the investigations by Grawitz, and even before, it is known that the peritoneum possesses an extraordinary absorptive and digestive power. The peritoneum disposes of the worst impurities—pus, cystic fluids, etc. This fact is undisputed. Grawitz's experiments have shown that even pathogenic germs are rendered harmless under certain conditions. On this fact is based in the first place the omission of drainage and the closure of the abdominal cavity, because reliance is placed on the peritoneum. On the other hand, Lawson Tait and others are actually enthusiastic about drainage. They would not be so if their experience had not made them so. The practice dates from Koeberlé, who first used the glass tube of Hegar and Kehrer for capillary drainage. The following questions arise: 1. Is drainage necessary? 2. Can it be performed aseptically? 3. Does it really do what a true drainage is to effect—carry off the wound secretions? The first question will be answered by the replies to the other questions; hence I shall begin with the question whether it can be performed aseptically. We can distinguish: (a) Simple drainage, in which merely the glass tube is introduced into the abdominal cavity without gauze, etc. (b) Tamponnade with very small pieces of hygroscopic gauze, cotton, lamp wicks, etc. (c) Combined drainage, *i.e.*, tube-gauze drainage, a combination of drainage by tubes with some bibulous material. Simple drainage would act well enough if the dressings were bibulous. But it is better to place the dressing into the drain; in this way

we obtain that combination drainage which I am forced to consider the best. The drain extends over the fundus uteri, passes backward and downward, and is covered with intestines and omentum. A curved drain lies exactly parallel to the curvature of the uterus; it is carried into the deepest portions where the secretions are situated which are to be led away. The drain should not be firmly applied, but some small spaces should be left between the glass and the lower opening. The external opening is sewed to the abdominal wall. The drains are soaped off in warm water, brushed, boiled in 5-per-cent carbolic solution, and preserved in sublimate solution 1:500. As to filling the tube with gauze, I cannot understand how our Vienna brethren can become enthusiastic for wick. It consists of cotton threads which absorb water very slowly, and with blood serum become consolidated to a thick mass. This cannot easily happen with gauze. The tube is cleansed with a copper sound. During the operation the toilet is first completed, then the drainage tube is inserted, next the abdominal wall is closed, after which all the secretion is pressed out, and finally aseptic gauze is introduced. Nothing is soaked up immediately after the operation; on the contrary, the first dressing remains for twenty-four hours. On making an inspection then, it is surprising to see how much has been taken up.

Can drainage really remove secretion? On this point experiments have been made by Helvetius on cadavers, and it is claimed that the effect was very slight. I cannot recognize these experiments, for they correspond in no way to the clinical conditions. Helvetius allowed 500 gm. to flow in; then tubes were inserted, some knocks were given with the hand, and then he was surprised that no fluid came out. Such experiments prove nothing. Nor is it the object to get fluid out of the abdominal cavity, but to render dry a certain, mostly small, even capillary space. It is intended only to let out what is secreted subsequently, as it were *in statu nascendi*. The dressings are often saturated for days after the application of drainage. This proves that the tube and gauze remove everything. Drainage is a safety valve. It removes that fluid which, if retained, might be absorbed; but of this we cannot be sure. Under all circumstances, therefore, it is better to

carry off these secretions. Tamponing with gauze alone I employ only under quite exceptional conditions, because the wet gauze cannot be changed; it remains for two or three days, always saturated, in the abdominal cavity; it probably also delays the closure of the abdominal wound in a way which would hardly be thought possible. If withdrawn the fluid is again scraped off back into the abdominal cavity. At most it may be used for temporary purposes. Since the publication of Lande's paper fourteen cases of drainage among fifty-four laparatomies are to be recorded. Simple glass drainage was employed three times after the enucleation of cysts. In this procedure vaginal drainage is absolutely superfluous. Drainage withdraws the fluids against the power of gravity. In all the cases the cysts ruptured. Precisely the cases of pyosalpinx which are not drained could be rescued. For these, drainage is most important. To be sure, the streptococci remain behind, but we remove the soil on which they live. Of these fourteen cases only one died; but in this case the chances of recovery were slight from the start.

CUSHING (Boston) recommended particularly washing out the abdominal cavity with hot water, and drainage, after which the abdominal cavity is to be closed. He recommended drainage for every case of laparotomy, for operations on the bladder, for salpingitis and intraligamentous cysts. Glass tubes with slight curvature should be used.

LAWSON TAIT (Birmingham) spoke strongly in favor of drainage. He said: What Dr. Säger has expressed only increases my doubts as to the correctness of the modern doctrine of antiseptis, which in Germany is accorded almost religious veneration. I am an apostate; I do not believe in antiseptis. I am convinced that this view does much harm. All the culture experiments are made on dead culture materials which do not correspond to the conditions of living tissue. Germs of decomposition can be kept off in many different ways; for instance, fruit can be so prepared with sugar that it resists decomposition. Blood also belongs to the tissues. As early as 1872 Campbell advised me to use drainage. I did not take his advice; it appeared to me horrible to put such a tube into the abdominal cavity. Finally I used it after all, and with excellent results. There are three indications: 1. As an

advance protection in an operation in which hemorrhage may occur. Many deaths ensue because we do not know that hemorrhage has taken place. This tube very quickly shows the hemorrhage. It is one of the best hemostatic means. Moreover, a hemostatic can be injected, as I have often done. The entire contents of a rectum passed through one of these tubes three weeks after an operation. 2. For the bladder. 3. For the rectum. As soon as the peritoneum is dry the tube is removed. Furthermore, drainage tubes must be employed in exhausted patients, also in all laparatomies on persons over 60 years of age. The tubes are quite small and are furnished in two sizes. The use of these tubes constitutes a great advance in abdominal surgery.

TRANSACTIONS OF THE GYNECOLOGICAL SOCIETY OF CHICAGO.

Regular Meeting, April 18th, 1890.

The President, JAMES H. ETHERIDGE, in the Chair.

VAGINAL HYSTERECTOMY, WITH SPECIMEN.

DR. FRANKLIN H. MARTIN.—There is nothing of peculiar interest about my specimen; it is simply a case that I wish to put on record of vaginal hysterectomy for cancer of the cervix. I saw this case first about six weeks ago. The cervix, extending to the right of the vaginal junction, exhibited an ulcerated surface of a carcinomatous appearance. A specimen was removed at the time, examined, and pronounced carcinoma. At the same time the cervix was thoroughly scraped down to as near the healthy tissue as I could get. The patient was then left until I could hear from the microscopic examination, or until some signs of the disease should reappear. In about three weeks the old trouble returned. I watched it for some time, until it began to involve the vagina, and advised the operation of vaginal hysterectomy. Mrs. H., age 36, who had had one child and three miscarriages, was therefore operated upon in this manner January 15th, 1890. The bases of the broad ligaments were ligated with silk, and for the remaining portion of each broad liga-

ment a clamp forceps (Byford's pattern) was used. The operation was performed without difficulty or complications, and the patient was discharged in about four weeks. I have seen her within the last two or three days, and she is well.

NEPHRECTOMY, WITH SPECIMEN.

DR. HENRY T. BYFORD.—This is a suppurating kidney removed early. Patient, Mrs. S., was 31 years old; married five years; no children. She has had periodic attacks of septic fever for over a year. The temperature would reach 103° to 104° F. during the attack, with great tenderness in the right side of abdomen. After a discharge of pus and granular material with the urine the symptoms would subside for a time. The organ was felt to be enlarged at each examination.

The kidney was removed through an incision made in the linea semilunaris, through which the other kidney was first palpated and found to be healthy. The tissues about the diseased one were healthy, but the uterine appendages were extensively diseased. I completed the operation by establishing drainage with iodoform gauze through a small opening in the lumbar region, and closing the abdominal incision completely. The ureter was ligated with fine silk at about one and one-half inches from the kidney, and placed so that any suppuration that might arise from it would find its way out through the lumbar opening. The temperature remained between 99° and 100° F. for a few days, and then became normal.

(I.) PROBABLE SARCOMA UTERI; (II.) FIBROMA UTERI.

DR. H. T. BYFORD.—These two specimens may be shown together, as the history is not so important as the method of operating. One is probably a sarcoma, the other a fibroma of the uterus. One was removed yesterday, the other to-day. This patient with the sarcoma was somewhere near the menopause. She was rather thin, had a soft pulse, the menses were diminished in quantity, and the tumor was growing rapidly and causing pain. The blood vessels beside the uterus were exceedingly large, showing great activity and vitality. She had had this trouble for four years.

DR. DUDLEY.—Do you feel sure of the diagnosis of sarcoma?

DR. BYFORD.—Yes, I feel quite sure, but could not swear to it without an examination with the microscope. I base my diagnosis upon the appearance of the tumor when I came down upon it, the immense vascularity, the absence of a cap-

sule (or, rather, the fusion of the capsule with the tumor), and the way the bladder had grown to it. The fact is, I left most of the muscular tissue of the bladder at the point of attachment on the tumor—the bladder seemed almost a part of it. However, I only got the specimen to-day, and shall be very glad to have the pathologist make an examination. There are certain clinical facts that make me feel quite certain that some tumors are sarcomata and others fibromata.

This other case is a small fibroid, and Dr. Jaggard will probably question the propriety of its removal. My reasons for removing it were the following: The patient was 25 years old; had been married eleven years. Ten years ago a prominent gynecologist in New York diagnosed pelvic inflammation and pyo-salpinx, and treated her accordingly. I saw her a year ago, and found the appendages enlarged and adherent in the posterior part of the pelvis. I was not certain but that this tumor was merely the appendages or an old hematocele to which everything had been glued. She was so tympanitic that it was impossible for me to make a satisfactory bimanual examination. I operated more from a symptomatic standpoint. The patient had been taking a good deal of liquor and opiates lately, was excessively nervous, and expressed herself as losing ground.

Coming down upon the tumor, I saw, of course, what it was. I could not get at the appendages, so I lifted it out and found them adherent and inflamed. In getting them out the posterior surfaces of both broad ligaments were pretty well disorganized, and the right broad ligament was one connective-tissue cavity. I could not take them out and leave the parts in good condition, so I took the whole thing out.

This makes six cases on which I have operated in this way, all recovering. It is a method, I think, that has not been tried by any one else. The operation is simply this: The broad ligaments are tied off, the uterus amputated below the tumor, and the stump is sewed up somewhat after Schroeder's method, but with catgut and silkworm-gut stitches. The bladder is separated, an opening made down into the vagina in the anterior fornix just against the cervix. The silkworm-gut sutures, left long, are used for traction, and the cervix is drawn down and forward into the vagina and a clamp put on from the vagina. I have usually held the stump loosely with clamps, that the apposed surfaces might heal up somewhat, as after trachelorrhaphy. But as in all cases but the second one the edges sloughed, I now prefer ligating rapidly with silk and clamping firmly with my hollow clamp, so that the slough will separate early and come off in the clamp. The clamp prevents the contact of the slough with the patient's parts, and avoids septic trouble.

After I turn the stump down I sew the peritoneum from behind the bladder to the posterior wall of the cervix. There is no raw surface left for extensive adhesive inflammation in the pelvis, with its consequent peritonitis and obstruction of the bowels. I have used drainage above in all of these cases but one, because I do not usually operate on simple fibroids, there being generally some development in the broad ligament and some little oozing surface left. I do not drain below. When I put on the clamp from below I put a finger from above in the cul-de-sac of Douglas behind the cervix, and a thumb in front of it, then push a pair of hemostatic forceps up from the vagina through the anterior fornix between my thumb and the cervix, and enlarge the rent by scissors-snipping and stretching.

DR. C. T. PARKES.—I want to say a word or two about Dr. Byford's specimens. I hope the doctor will not think I am making any adverse criticism; I only desire to express my opinion, because it has been with me a very difficult matter to come anywhere near deciding the character of a tumor of this nature in the uterus, as to whether it is a simple myoma or whether it possesses some of the characteristics of the sarcoma. I think the usual characteristic of a sarcoma is that it does possess a capsule. I should consider the cavity in this tumor, from merely looking at it, as a simple degeneration of myomatous tissue from want of nourishment.

I think the kidney specimen is very interesting, and unusual in the fact that a suppurating kidney should have existed this length of time without any further increase in size and without following the usual disposition of these troubles towards external manifestation of suppuration. The only explanation that appears in this case is the fact of the peculiar enlargement of the ureter, which enabled it to discharge the accumulated matter in the pelvis of the kidney into the bladder. Usually in suppurating kidney almost the first manifestation we have is the formation of a tumor and the development of a perinephritic abscess which opens externally. Surgeons have always found difficulty in the treatment of these cases, on account of the presence of cicatricial elements formed in the surrounding tissues, preventing the easy removal of the organ. So far as general surgery is concerned, it is almost a rule that suppurating kidneys should not be removed, and this rule is sustained by the results in many cases. But this case is very fortunate in the fact that it had no surrounding complications; all the trouble was inside the kidney and could be attacked without any such difficulties as usually arise. It is an interesting subject to me, because I have had quite a number of these cases of suppurating kidney in which the trouble had gone on to perforation of the capsule of the kidney and

the formation of a perinephritic abscess and degeneration of the tissues about it. I have always dreaded to remove them, on account of the complications arising from the presence of adhesions and the danger of septic trouble, but have adopted the plan of laying them widely open, which is not very satisfactory, as the patient goes on to apparent recovery, but will return again owing to the many pockets in which pus accumulates. The question is, What is the best procedure? It is a serious matter to remove a kidney, especially a suppurating one. The other kidney does not always perform its function, for a time at least. The idea of continuous irrigation has suggested itself to me in these cases. Whether it can be put in force and applied as in other cavities is a question I should like to see settled some time.

DR. MARTIN.—I had the pleasure of witnessing a couple of these operations by Dr. Byford with this method of treating the stump, and it seems to me that it is of sufficient interest to at least receive comment and commendation. The only objection that I can offer to the operation performed by Dr. Byford is that for a nervous, rapid operator the procedure is altogether too long. Dr. Byford spends from two and a half to three hours in performing this operation, and while the abdominal cavity is perfect after the stump is secured, and it is a case that you will pronounce a success almost from the beginning, at the same time it is very tedious, and a great many operators, even good ones, would object to doing it on that account. It seems to me that this method of treating the pedicle is an advantage over the fixation of the stump in the abdominal wall by means of clamps, inasmuch as it does not interfere in the slightest with the bladder, and it does not afterwards leave an ugly, depressed cicatrix. That point is certainly of value, especially the pressure upon the bladder. When the stump is turned down, there seems to be no more pressure upon the bladder than if the cervix had been amputated at the internal os and left projecting into the abdominal cavity.

DR. W. W. JAGGARD.—Dr. Byford alludes to a criticism I felt called upon to make some evenings ago when he presented a uterus removed by vaginal hysterectomy. The operation was well done, and was a success in so far as the patient recovered. The criticism I made was that there was absolutely no reason for the removal of that uterus. There were two or three small foci of myomatous tissue, not one of them bigger than the terminal phalanx of your little finger. As I remember, the alleged indication for the operation was the fear, first, that these foci might undergo malignant change, and, second, dysmenorrhea. But the woman was very near the menopause—45 years old, I think. The other point in the

indication was the fear that this myomatous tissue would undergo a malignant change. Such a case ought not to go on record without some vigorous protest.

DR. BYFORD.—I would like to say a word with regard to Dr. Martin's remarks. I think he extends the time a little from what it usually takes. The reason why it has taken so long in most cases is because it is a new procedure; I hardly knew in any case when I started that I was going to finish by this method. Ligation and clamping of the stump will save much time in the future. Another thing is the complications; I was one time half an hour getting this tumor out on account of adhesions below.

In regard to the capsule, I did not mean to say that sarcomata have no capsule; I mean that their capsules are adherent, and cannot usually be separated from the tumor without excessive hemorrhage.

As to the kidney, of course I understand the danger of removing a suppurating kidney. My operation was exploratory at first. I opened into the abdominal cavity, examined the other kidney and found it normal in shape, size, and surroundings. I think it is what we ought to do with all suppurating kidneys—remove them before the pus has penetrated the capsule. This patient has no constitutional symptoms of tuberculosis, nor any trouble that would denote general infection from any disease.

In regard to the case Dr. Jaggard referred to, I would state that I can hardly agree with him as to the size or condition of the largest of the myomatous masses.

AFTER-TREATMENT OF LAPARATOMY.¹

By DR. T. J. WATKINS.

DR. JAGGARD.—I was very much interested in the paper, and particularly in the allusion to ether as a renal irritant, and the reader's reference to the fact that he had observed two cases in which ether was responsible for fatal nephritis. I believe that is one of Emmet's notions. The evidence upon which the notion is based, however, has never been adequately stated. Dr. Weir, of New York, has published a very interesting paper upon his observations of the effect of ether upon the kidneys, and the result goes to show that ether employed as an anesthetic is not a renal irritant. In no one case has he been able to establish the fact that ether produces any irritation of the kidney above that of any extremely volatile substance. It would be interesting if the reader of the paper would give the evidence upon which he bases his con-

¹ See original paper, page 929.

clusion that ether was responsible for the two cases of fatal nephritis. Can he exclude septic infection? I have had some experience with ether in puerperal convulsions. Emmet once said ether was strongly contra-indicated under these circumstances, on account of the danger of increasing the congestion. Upon observation of quite a number of cases I have never seen any adverse influence. As regards the hypodermic injections of ether in shock following severe operation, hypodermic injections of ether will create no result whatever, provided the needle is sterile and the skin is sterile. Ether does not come within the group of reagents that cause tissue reaction, of which turpentine and croton oil are examples. The value of ether may be questioned when it is given as a stimulant when the patient's blood is already saturated. When chloroform is used it is unquestionably one of the best diffusible stimulants.

In regard to the length of time the patient should rest in bed after laparotomy, this point was brought very unpleasantly to my attention about a year ago. I had been nursing along my few laparatomies, some ten, trying to get up to a hundred without a death. The case was a difficult one for me—bilateral hemato-salpinx, a tumor on each side about as big as a goose egg, with universal adhesions. I had a good deal of difficulty in getting at the tumors, ligating them, and securing a clean pelvic cavity, but finally accomplished this, and the first two weeks of the patient's convalescence were perfectly afebrile, with no complications whatever. At the end of two weeks the husband, a physician and a friend of mine, wished to remove his wife from the hospital, and the house physician, without asking my consent, gave him permission to take her home. She travelled about five miles in a carriage, worked around the house for a day, and perished a week later of a furious peritonitis. No autopsy was allowed. But the course of her convalescence in the hospital, the fact that all the bodily functions were normal, the urine perfectly normal, lead me to think there was some relation between getting up out of bed at the end of the second week and taking this drive, and the peritonitis. I remember when I was with Dr. Goodell in the University Hospital a case gave us a good deal of trouble, in which a woman got up at the end of eighteen days and went from Philadelphia to Pottsville; during the ride home the abdominal incision opened from above the umbilicus to the pubes and some of the intestines protruded, but fortunately when she got home a physician stitched up the wound, and she made an excellent recovery.

Dr. PARKES.—Mr. Chairman: I do not know that I have anything to say, simply because the paper leaves nothing open for discussion. It is such an admirable paper in

every way that I do not think any one can find fault with it. I can see very plainly that the many points of interest that have been mentioned in this paper will come under the surgeon's notice at one time or another if he sees many patients. So far as the rule for treatment of patients under my charge is concerned, I must say that individually I give them very little, because I believe that if the patient has been prepared before the operation, no after-treatment is required. Within the last two weeks I have done four laparatomies, some of them of moderate severity and some quite severe in character. Those patients are all well; none of them have had complications of any kind, no discomfort of any kind, and have required no medication with the exception of a cathartic. I think this arises, however, from the care which the surgeon adopts with reference to the patient both before and during the operation. The rule with me has been, in reference to temperature, not to place any more reliance upon it than upon any other symptom. The thermometer will frequently give a temperature astonishing to the nurse, and perhaps to the interne who is not accustomed to these cases; and you see the patient, and take into consideration all the symptoms presented, and pay no attention to it. A temperature of 104° , for instance, will not infrequently come from constipated bowels or accumulation of gas, so I cannot say I have any rule with reference to that; if a temperature precedes and is accompanied with other symptoms, exhaustion or malaise or headache, showing that there is some difficulty, I should accord my support to the suggestion of attempting to control that condition by the use entirely of sponging. I do not believe in the administration of any antipyretics. I believe that they are just putting on the patient an increased burden, to get rid of a poison which has to be eliminated in addition to the poisons of the disease. So far as my experience goes, the application of cold to exposed parts of the body has been sufficient to secure a falling temperature, if the trouble has not depended upon serious septic infection. I believe these cases of severe septic infection, if they do get well, scarcely ever do so because of the doctor, but by the grace of God. The most of them are better left alone rather than to have active interference further than continued stimulation with whiskey and milk, as my friend Dr. Wright once said; I believe in that in this condition as well as septic conditions from other causes. What will be the result of operative interference in cases of septic peritonitis is to be proven by further observation. It seems to be the general impression of the profession that such interference is justifiable in all cases of septic peritonitis.

DR. E. C. DUDLEY.—Mr. President, Gentlemen: About fifteen years ago I was an interne in the Woman's Hospital of

the State of New York, and in that capacity I had to attend to the after-treatment of laparatomies which were performed in that institution. They were done mostly by Thomas and Eminent and Peaslee; but I desire to contrast the treatment which was then in vogue with the treatment which is apparently now in vogue, as shown by the essayist, who only recently, as an interne in the same institution, has been looking after the treatment of patients of practically the same operators. In my time any patient presenting herself for abdominal section was subjected for a week to a very careful diet, mostly liquid, which usually resulted in loss of strength, to counteract which she was given five or ten grains of quinine two or three times a day; and to prepare the nervous organization for the shock of the operation she was usually given pretty large doses of opium. After the operation had been performed, the quinine and opium in large quantities were kept up, the opium often to the extent of sending the respiration down to seven or eight a minute. That was done as a preventive measure, in order to get rid of the peritonitis which was supposed to threaten all of these cases. I do not know what the proportion of deaths was, but it was enormous. Many doubtless died in consequence of the preparatory and after-treatment, and many others died from the fact that the operator did not take as much care of what he put in the abdominal cavity as he did of what he took out. Now that clean surgery is the order of the day, much of this complicated preparatory and after-treatment has disappeared: indeed, most patients get through without any after-treatment at all beyond the mere administration of a cathartic or some other medicine, such as an individual would take in ordinary health. This paper goes into the details in a very admirable way; it is timely and valuable because cases do arise in which the after-treatment is necessary, but in this whole subject the times have changed and we have changed with them.

The author mentioned a certain enema of glycerin and sulphate of magnesium and water—about an ounce and a half of each. If I am not mistaken, this is a peculiar treatment which Dr. Watkins has used a great deal. I have adopted it with a great deal of satisfaction for the relief of distention. There is another enema of which I learned in Birmingham and Edinburgh, which is the regulation enema in Scotland and England—that is, the so-called turpentine enema, which is composed of about a pint of very stiff soapsuds to which have been added one or two drachms of spirits of turpentine. This is an excellent agent for cleaning out accumulations of gas in the bowels. I have used in the soapsuds strong beef tea instead of water, because a certain portion will be retained, and, being beef tea, will serve as nourishment for the patient. Dr.

Keith, in Edinburgh, once told me that he always looked for the passage of flatus with a great deal of interest, and he always felt pretty sure that once the flatus passed the patient was safe.

As to the drainage tube, I use one no larger than a lead pencil; it fulfils the indications perfectly, and leaves a small opening to heal. Like a previous speaker, my first ten cases of laparotomy had all recovered, and I was working my way gradually up to a hundred without a death, when I had a patient in a hospital who, without my knowledge or consent, was removed from one room to another; and in the night, while the watch was away, she paid a visit to another patient, who gave her some hard-boiled eggs and Limburger cheese. This was on the 15th, and on the 17th she died, and the diagnosis was garbage on the intestines.

DR. BYFORD.—Mr. President: The paper is so complete, and confines itself so well to the subject, that it is hard to criticise it in any way except to commend.

In regard to the after-effects of ether, I have had a little experience in one way—that is, after long operation—and I have noticed that a patient who has been under ether two or three hours is not apt to vomit much. I think it is very much like giving a small or a large dose of morphine: if you give some women one-sixth to one-fourth of a grain there will be nausea, but if you give them a large dose they will often go to sleep and sleep it off. Very often by giving a full narcotic dose when the patient is coming out of the ether we can prevent nausea. I have had some cases of most excessive vomiting cured by giving something to destroy the reflex sensibility, viz., about sixty to eighty grains of chloral per rectum in divided doses (twenty grains every two or three hours), or large hypodermics of morphia. I have not gotten any benefits from cathartics except in establishing the continuity, one might say, of peristaltic action. If the patient vomits and the bowels are in such a position that peristaltic action does not go on properly, I think cathartics will very often give relief. Often when I see symptoms like that coming on I give an enema of turpentine, glycerin, and water, and what seems like developing sepsis disappears.

In regard to taking out drainage tubes, I can hardly agree with the doctor. Local abscesses have occurred from removing the drainage tube too soon. When we put in a tube it is possible that the peritoneal cavity may not be shut off after twenty-four hours, or an accumulation of fluid near the drainage tube may be forced into it after two or three days. Nor can I agree with the principle of taking out the stitches in six days; I think it sometimes dangerous. I have two cases now in which the stitches have been left in two weeks, al-

though I sometimes take half of them out in less time than that. I use silkworm gut. I have twice opened the abdominal cavity for septic inflammation and once for peritonitis. In each case the patient died promptly in a few hours, which led me to think the abdomen should be opened early, and that we should not wait until sepsis has fully developed. If we leave any extensive surfaces of denuded intestine, the use of cathartics is thought to limit adhesions; but I believe that wherever the peritoneum is abraded there will be adhesions anyhow and in proportion to the injury. Cathartics cannot prevent them. I give myself no concern about adhesions alone, because I have seen all the intestines glued together from peritonitis and no trouble whatever result. But if viscera are glued together in such a way as to interfere with their function, there will be trouble. I do not think there is so much in preventing adhesions as in having these adhesions occur when the intestines are in a proper position to perform their function. For this purpose I give cathartics, and give them early, and after the bowels have moved keep them quiet.

DR. H. P. NEWMAN.—Mr. President: The subject has been thoroughly discussed, and possibly I cannot say anything further of interest other than to give a few details as to the method used at St. Elizabeth Hospital. First, in regard to the stomach: I am in the habit of giving lime water and milk in small but frequently repeated doses—say a teaspoonful to a tablespoonful as often as every two or three minutes—until larger quantities can be taken at long intervals. Given in this way, it is a valuable agent in allaying thirst, correcting acidity, checking vomiting, affording nutrition, and restoring the loss of fluids. For the latter purpose saline injections per rectum are more prompt in their action, and when indicated are frequently resorted to. Another method in use at the hospital is the rubber, or Esmarch's, bandage applied over the usual dressings. It allows of mobility of the abdomen and respiratory tract, and is a very great comfort to the patient when not applied too tight, but sufficiently so to afford some support. This device was first used by Dr. J. Frank at the hospital, and I believe is deserving of special mention, inasmuch as it keeps up an admirable, uniform support and warmth of the parts—the latter often a relief to the usual abdominal distress, so that an opiate becomes unnecessary; and the former of great value, especially in those cases of severe retching and vomiting.

The iodoform wicking I think has advantages over the usual gauze for capillary drainage. The shreds, as you know, are continuous and not apt to be broken or interrupted like gauze; it can be passed into the ordinary glass or rubber

drainage tube, as well as used to advantage after the removal of the tube.

In regard to the use of the catheter after laparatomies or any surgical procedure, I was pleased to hear the fact spoken of that one can, with a little patience, get along without the catheter in many instances, certainly to the great advantage of both patient and attendant. Usually the use of the catheter must be delegated to a nurse or an attendant, and unless great care is taken, both as to cleanliness and the use of the instrument, an irritability of the urethra, neck of the bladder, or possibly cystitis results, which is not only annoying to the physician, but entails suffering upon the patient, and leaves a trouble that is apt to be extremely tedious in its after-treatment.

In regard to the injections into the bowel referred to, there seems to be one valid objection to them—they are apt to create an intolerance on the part of the rectum, and where used early may prevent that which is of greater importance later on, the nourishment of the patient per rectum with whiskey, milk, etc.—our “sheet anchor” in after-failure from sepsis and other causes.

DR. PARKES.—I would like to say one word about ether. It has been the anesthetic I have used universally in all cases of laparotomy. I think there is a great point in the manner of its administration and the inhaler that is used. I am surprised at the very small amount of ether required to keep a patient asleep by means of the ordinary hospital inhaler. It is a rule with me to advise the anesthetizer not to keep the patient profoundly asleep, but to remove the ether occasionally and let the patient have as much air as possible and get along with as little ether as possible. The after-effects depend upon the peculiarities of the patient as to its influence upon vomiting. I cannot say that I have ever used any remedy that I have been satisfied was of great service in relieving vomiting. By mistake I once used a remedy that stopped persistent vomiting instantly. The patient was given a teaspoonful of 2½-per-cent carbolic acid. I am a very strong advocate of the non-use of the catheter. I do not think it ought to be used at all. I think it is a good idea in the preparatory treatment to teach the patient to use the bedpan. The greatest difficulty arises from not paying attention to that. I am quite sure the use of the catheter has annoyed many patients a good deal. I do not believe in keeping the patient absolutely quiet; I allow my patients to move about, and tell the nurse to move them. I do not think the wound itself nor any of the complications in the abdomen are disturbed to any harmful degree by the slight changes of position which give such comfort to the patient.

I am glad Dr. Jaggard raised the point of keeping the patient in bed for some time after the operation. I have had a similar experience to his, but not so bad in its results, still one in which the patient was placed in danger by getting out of bed in the second week, and I have had patients in a very short time develop an attack of peritonitis from the same cause. I do not allow the patient to even assume a sitting position until the end of the third week, no matter how well she has done.

Let me say one word about after-treatment: I believe it is best for us to come to the conclusion that no after-treatment is required.

DR. T. J. WATKINS, in closing the discussion, said: Mr. President: With reference to the time of removal of the drainage tube, I still adhere to its early removal as suggested in my paper, for if a sufficient amount of fluid remain connected with the tube at the time of its removal to interfere with the recovery of the patient, it will well up through the sinus; then by keeping the sinus patent just through the abdominal wall, it will heal in a most scientific and satisfactory manner. If the fluid be not connected with the sinus, allowing the tube to remain *in situ* will do no good, but will produce constant irritation.

I have often removed the drainage tube earlier than I thought wise, but as I had observed in a number of cases that sinuses followed the prolonged use of the tube, I took the chances, and in none of these cases did the wound do badly. To allow a sinus, not connected with a suppurating sac, to heal from the bottom by frequent shortening of the tube, seems to me absurd, for the walls of the sinus are so contractile that the sinus will readily close unless prevented. It is necessary, then, to keep the sinus open only just through the abdominal wall, and for a short time.

The time of removal of the stitches is, I think, a matter of rather slight importance: if the wound does well there is no reason why the stitches should not remain *in situ* more than one week, if desirable; but if the incision be short and the union perfect, there is no reason why the stitches should not be removed at the end of a week.

I am unable to see any reason for the opinion expressed that etherization does not produce nephritic congestion. No one doubts that ether is eliminated by the kidneys, and that when given in small amounts it has an active diuretic effect. It is, moreover, a therapeutic fact that all active diuretics, when given in excess, produce nephritic congestion. Scanty secretion of urine, pain in the region of the kidneys, nausea and cephalalgia not infrequently follow etherization, and these

symptoms are usually relieved by increasing the functional activity of the kidneys.

The danger from hypodermics of ether is not septic infection, but local paralysis.

The cases cited by Drs. Parkes and Jaggard, in which too early getting up after laparotomy proved fatal, present many points of interest. A number of cases are on record in which, after the patient has done well for one, two, or three weeks following laparotomy, peritonitis and septicemia have suddenly developed with a fatal result. In such cases the autopsy has usually demonstrated that death was due to the rupture of a pus sac. In the cases cited it might be interesting to inquire first: Were they not of this nature? and second: How would the patients have done had they remained longer in bed?

In the matter of abdominal support I consider the device of Dr. Newman as practicable and worthy of thorough trial. I think, however, that the use of an abdominal supporter for many weeks or months after laparotomy is bad practice, as it causes atrophy of the abdominal muscles and thus increases the liability to hernia. The late Dr. James B. Hunter was one of the first to abandon the abdominal supporter. As soon as the wound was healed he gave the abdominal walls the rough massage, and in none of his cases, as far as I know, did the distressing feeling of weakness of the abdominal walls, so commonly noticed after the prolonged use of the supporter, occur, or hernia result.

I think the question of the kind of ether inhaler to be used is most important. The Clover inhaler is theoretically bad, but practically it works well. When properly used, not more than two ounces of ether are necessary for the first hour, and frequently one ounce suffices for an operation. The liability to vomiting is much lessened when little ether is used, and necessarily congestion of the kidneys and air passages is much less frequent.

I thank the Fellows of the Society for their kind attention to, and discussion of, the paper.

REVIEW.

LEÇONS DE GYNÉCOLOGIE OPÉRATOIRE—LESSONS IN OPERATIVE GYNÉCOLOGY, by VULLIET and LUTAUD. Second Edition. 200 woodcuts. Pp. 490. A. MALOINE, Paris, 1890.

The second edition of these lectures comprises a consideration of the more important therapeutical methods that have been introduced within the last year. The processes of Terrier and of Leopold for the fixation of the uterus by suture to the walls after abdominal section are described, but the authors properly state that few cases of uterine malposition are such as to warrant the operation. Lawson Tait's operation for perineal lacerations, by the flap method, is favorably described. Attention is also paid to Nicoletti's operation, performed in some cases of uterine displacements, by the amputation of the uterus above the level of the angle of flexion, with a special mode of suturing the uterus to the vagina, so as to correct deviations.

The work, as a whole, is a brief exposition of the modern science of gynecology, the operations being very clearly described and fairly illustrated. We cannot agree with the authors in their statement that tupelo tents, though swelling more easily than laminaria, become rougher and rectangular, thus wounding the uterine walls; but, apart from this statement, we are pleased with the volume, which well repays perusal.

VAN' S.

ABSTRACTS.

1. STRATZ, C. H.: ON THE TREATMENT OF CERVICAL CATARRH (*Zeitsch. f. Geburts. u. Gynäk.*, xviii., 2).—In order to determine the therapeutic effects of the chloride of zinc, the author made a series of tests with this substance in a large number of cases. Bröse and others attributed a peculiar specific action to the drug in cervical and uterine catarrh. The author was surprised that Bröse and many others started with the premise that cervical catarrh, erosion, and endometritis always occur together, in opposition to the generally prevalent view of Schröder that it is only in exceptional cases that disease of the cervix progresses to the uterine mucous membrane. In order to test

the matter, he excised small portions of the cervical mucous membrane in all suitable cases which were undergoing treatment, and scraped off specimens from the endometrium. Microscopical investigation showed that of 30 cases in which the changes in the cervix were apparent even to the unaided eye, there were but 5 which were associated with endometritic processes; 3 times of interstitial, twice principally of glandular form. Even in cases of profuse muco-purulent secretion from the uterine os he found normal endometrium, that is, no distinct proliferation of glandular or connective tissue. He thinks that in the latter cases the vast majority are limited to an isolated disease of the cervical mucous membrane.

He treated a series of 28 cases with daily applications of 10-per-cent solution of zinc chloride, then a second series with application every five days of a 50-per-cent solution—these two series were compared with two others; a third series of 25 of wedge like excisions (after Schröder), and a fourth series was treated with concentrated lactic acid. As a result, he makes the following conclusions:

The action of zinc chloride is such as to destroy the less resisting cylindrical epithelium at the surface, but irritates the more vigorous pavement epithelium and the connective tissue stratum to new-formation; it not only does not destroy the deep-seated glandular portion, but by the proliferation of its surrounding elements protects it from further therapeutical action.

It depends upon the resistance of these elements whether, after a longer or shorter period, the imprisoned glandular tissue again begins to proliferate and so lead to relapse.

There can be no thought of a specification of the chloride of zinc or of lactic acid; they are to be regarded only as adjuvants in the cure of milder cases, which, properly used, ought never to be harmful, but, on the other hand, do not with absolute certainty lead to cure.

For the radical and certain cure of cervical catarrh, we have as yet no other remedy save the wedge-shape excisions of Schröder.

L. R.

2. STRYK, VON: INTRA-UTERINE CAUTERIZATION IN ENDO-METRITIS (*Centrbl. f. Gynäk.*, June 14th, 1890).—The author replies to some strictures recently made upon this procedure by W. Schrader, and contends that, under proper precautions and in the absence of wounds and abrasions, there can be no danger of septic infection and its consequent evils. In curetting, the greatest danger from septic infection is always present; a precautionary measure exists in opening, and keeping open after the operation, the cervical canal, so that free exit of probably virulent contents may be assured. The ute-

rine contractions should be strengthened by ice bags or by ergotin.

L. R.

3. LINDEFORS, A. O.: A CASE OF CONGENITAL CYSTIC ELEPHANTIASIS (*Zeitsch. f. Geburts. u. Gynäk.*, xviii., 2).—The mother was a peasant woman, 31 years old, and had three well-developed children. Menses ceased in April, 1889, in consequence of renewed pregnancy; felt perfectly well during pregnancy, but during the summer suffered from "swollen" feet and a general feeling of discomfort and puffiness. In October she was taken with labor pains, which quickly became violent. After the escape of the waters, the midwife examined her and found small fetal parts—whether footling or hand was uncertain—presenting. The author was thereupon called in, but when he arrived the labor had terminated, the midwife having helped by traction upon the legs, the large-sized head occasioning difficulty. The cord was very short; the child was dead, but not decomposed; the placenta followed spontaneously in fifteen minutes. It was very voluminous, pale; the maternal surface very much loosened, with cotyledons pushed away from one another; edematous; child only 40 cm. long, thin, atrophic. The fetus lay upon a kitchen plate, a fleshy-red, gelatinous, vibrating mass, which at first sight presented only an enormous head and small, webbed-like extremities. Stretched out it measured 34 cm. in length; head circumference, 38 cm.; chest circumference, 24 cm.; weight was about 1,400 gm. According to ordinary reckoning, the fetus was at the end of the sixth or beginning of the seventh month; the head was remarkably large, the extremities somewhat small for the age; at the umbilicus there was a hernia the size of a hen's egg. The entire skin presented a very peculiar appearance: it was glistening red, tensely stretched, edematous, soft, and vibrating like gelatin; it was also very friable and was torn in several places; it was here and there puffed up, and the head was provided with four large flap-like protuberances; the brow flap, which hung over the eyes, was of pretty hard consistence, as were the two lateral flaps; but the enormous flap at the occiput, which hung down the back like a cape, was soft, elastic like a bladder filled with water, and swung around like a sac when the fetus was moved; the four flaps were separated from one another by shallow furrows. The face was fleshy, and puffed up like the rest of the skin; the eyes and ears were perfectly developed, but the nose was wanting, only showing two openings; the genitalia were distinctly masculine. The large brow flap appeared upon incision to be composed only of cutis and subcutaneous cellular tissue, very much thickened; the section was from 14 to 15 cm. in thickness; on the cut surface numerous small clefts or cavities became vis-

ible; the microscopical examination revealed a shaggy network of loose connective-tissue fibrillæ, with numerous lymphoid cells in the meshes, and here and there traversed by tortuous enlarged vessels filled with blood globules. The large occipital tumor, on the other hand, was a cyst with serous contents, and a thin wall, only 2 to 3 mm. thick; the sac was lined by a very fine membrane which sent off a septum in the sagittal direction which separated the cyst into two compartments; the cystic cavity was entirely outside the skull, and no communication could be found between it and the brain. The cyst was about the size of two fists. The omphalocele was opened and contained intestines and a portion of the right lobe of the liver. A communication reaching the entire length of the pericardial sac was found between the latter and the left pleural cavity; the left auricle lay in the cleft with its end projecting into the pleural cavity. The heart was opened *in situ*; there was a common cavity and a common auriculo-ventricular opening; there were two auricles, very incompletely separated.

All these changes were developmental shortcomings, delayed phases of previous development. It remains a question whether they alone suffice to explain the great general anasarca and the cuticular hypertrophy.

L. R.

4. GOTTSCHALK, S.: THE AFTER-TREATMENT OF VAGINAL EXTIRPATION OF THE UTERUS (*Centralbl. f. Gynäk.*, June 21st, 1890).—After calling attention to the very good condition of many patients after operation, and the usual rule followed of allowing them to leave the bed at the end of from ten to fourteen days, G. warns against following any arbitrary law in this regard, but to individualize from the constitutional strength and temperament of the patient, even though the operation be followed by the most favorable symptoms. He considers it unwise to allow them to get up before the twentieth day, a recent mishap which occurred to one of his patients, in the form of synovitis of both knee joints on getting up on the fifteenth day, after a perfectly ideal after-time, serving as a text for his objurgations.

L. R.

5. LIHOTZKY, G.: FOREIGN BODIES IN THE BLADDER (*Centralbl. f. Gynäk.*, June 21st, 1890).—Patient was 57 years old, and entered the clinic with the statement that a portion of a glass catheter was in her bladder. Had suffered for seven years from urinary trouble, and for the past six weeks from inability to spontaneously micturate. She thought catheters would be too dear, so she conceived the idea of employing a glass tube, one end of which was rounded off at a gas flame. After having catheterized herself in bed the

night before, she was so overcome with drowsiness that she sank back in bed, upon which the tube broke off. All efforts which she made at extraction were of no avail. Upon passing the sound into the bladder the former gave forth a clear intonation upon coming in contact with the foreign body; the latter could also be felt through the vagina, lying transversely from upper right side to the lower left side of the posterior vesical wall. The urethra was dilated under chloroform with Hegar's sounds until the index finger could pass the urethra. A narrow, slightly curved forceps was passed in alongside the finger, and after the tube had been shifted so that its broken-off end lay opposite the internal urethral orifice, it was easily grasped by the instrument and withdrawn, the finger serving as a protector to the soft parts. The extracted piece consisted of thin glass tubing of 5 mm. calibre and was 6 cm. long. Some fever followed, with burning pains in the bladder, which disappeared on irrigation with solution of boracic acid and the injection of 5-per-cent cocaine. Patient remained perfectly continent, but had to be catheterized because of the persisting paresis.

The author reports this case mainly to warn against the indiscriminate employment of the otherwise valuable glass catheter. In the hands of the physician it is a very valuable instrument, but for self-use by patients it is not unattended by serious risks.

L. R.

6. SAENGER, M.: ON THE RADICAL OPERATION FOR LARGE, NON-INCARCERATED UMBILICAL HERNIE (*Centralbl. f. Gynäk.*, July 5th, 1890).—The following may be regarded as indications for radical operation: 1. Small umbilical herniæ should be operated upon when they have one or more times caused partial or complete incarceration; when their retention causes difficulties; when pains exist in the rupture or its surroundings, or cause inability to work or great inconvenience. 2. Large umbilical herniæ, capable of only partial reposition or not at all reducible, should be operated upon when they constantly enlarge; when they cause frequent symptoms of disturbance of intestinal movement and its sequelæ—flatulence, obstipation, cardialgia, vomiting, icterus, etc.; when they give rise to the fear of complete incarceration or have already become incarcerated; when intertrigo and cutaneous ulcers develop upon the subjects, and the skin becomes dangerously attenuated; and when, finally, the patient is deprived of enjoyment in life and her capacity for fulfilling her tasks. Gynecological literature is remarkably deficient in this class of cases. The author has done the radical operation in three cases of large umbilical herniæ.

CASE I. was a married woman, 48 years old; had had three

labors and two miscarriages. Had suffered from the hernia for fifteen years, during which time it slowly enlarged. During the past fifteen months the tumor had become incarcerated three times, each time accompanied by violent biliary vomiting. Twice she succeeded herself in reposing the rupture; the third time a physician employed taxis. She complained of great pains inside the hernial protrusion itself, was incommoded on walking and working, and the skin was constantly chafed and sore. The protrusion was double the size of a man's fist, hanging to one side like a sac. The cuticular covering was very thin, in places stained brown, and was the seat of extensive intertrigo on the side opposed to the abdominal wall. Coarse omentum could be felt to preponderate in its contents. Diminution in size could not be effected by several days' repose in bed and taxis.

Operation was begun under preparations similar to a laparotomy. The skin was carefully split open by lifting up a fold at the upper border of the tumor. The thinned aponeuroses, fascia transversalis, and the peritoneum were opened to a short extent. The finger, on being introduced, could feel that at the upper part of the tumor there were no adhesions. The hernial sac contained very fat omentum of hard consistence; the latter, weighing 500 grammes, was excised after completely opening the sac. After replacing the carefully ligated omental stump the hernial ring became plainly visible. A small sponge was placed in the abdominal cavity, and the hernial sac was separated and removed up to the margin of the ring. The latter was notched in four directions and sewed with five strong concealed silk sutures. The abdominal wound was closed by deep sutures (including aponeuroses), silk suture, and superficial button sutures; good union. Three weeks later patient was discharged with solid abdominal cicatrix. Six months later the abdomen was in the best of order. Patient died thirteen months later of pneumonia.

CASE II.—Mrs. B., 44 years old, presented an enormous umbilical hernia, containing nearly one-half of the intestinal coil, existing for fourteen years. It hung down to the thighs, and its base was so broad that it could not be embraced by the fingers of both hands. The extremely thin, pigmented skin plainly disclosed numerous intestinal coils. Tympanitic resonance over nearly the entire tumor. Incision was made at the top of the tumor, including the hernial sac. On both sides there was a confusion of fibrinous bands which, appearing as hernial rings of secondary order, were nothing else than arcade-like portions of the aponeurosis, through which the hernial contents had pressed forward under the skin. In these there were entangled intestinal coils (ileum, jejunum, and a piece of the descending colon), and hypertrophied,

much-twisted and perforated omental masses, which were broadly adherent, the gut being nowhere attached. After making an incision in the hernial sac about 20 centimetres in length, the omentum was partially separated and resected, with little loss of blood. The hernial ring was freshened with the scissors and closed with seven strong concealed silk sutures, which included the peritoneum, and the hernial and abdominal sacs removed. The abdominal wound was closed by two rows of button sutures, as well as numerous relaxation sutures. The patient made an excellent recovery, and six months later showed no signs of relapse. The resected omentum weighed 500 grammes, the hernial sac 300 grammes.

CASE III. presented some unusual features. Patient was 38 years old, and presented herself four months after her second and last confinement, with an irreducible omental umbilical hernia about the size of a walnut. There was a thin-walled, brown pigmented hernial sac, at the upper border of which was the broadened umbilicus. In the prone position only the above-described protrusion was noticeable, but upon the patient getting on her knees a second hernial protrusion appeared above the umbilicus which was three times as large as the former. The hypertrophied omental mass was resected, the ring split, and the stump returned. It was then apparent that a second omental mass, with thin pedicle and as large as a fist, had made itself a bed within the subperitoneal connective tissue above the navel, with numerous ramifications and adhesions to jumbled connective tissue strands. The omentum was liberated and replaced, and the hernial sac excised. Good recovery.

L. R.

7. BÄRSONY, J.: INVERSION OF THE UTERUS (*Centralbl. für Gynäk.*, July 12th, 1890).—Winckel attributes the inversion of the uterine wall into the uterine cavity to paralysis of the site of placental attachment. The occurrence is not rare. Neglected or improperly treated recent labors play an important etiological rôle. The treatment consists in the attempted reposition of the organ, and, in the event of this failing, its amputation. The longer standing the inversion the more difficult the reposition; yet the latter should be tried in all cases. Ordinarily the two hands will suffice for the manipulation, the patient being anesthetized; but should no success follow, it should be attempted to replace the organ by the steady pressure from a colpeurynter. In old cases adhesions form, the pedicle atrophies, and amputation must be resorted to. The following case came under the author's cure: Mrs. N., 23 years old, was delivered four months previously. She presented on examination a lengthened, egg-shaped, freely movable tumor in the vagina, its upper end pediculated. The sharp border of

the uterine os surrounded the pedicle; the fundus uteri was nowhere to be found. A colpeurynter was inserted (causing little pain), continued, under proper cleansing precautions, for sixteen days. No improvement. Was removed for three days and again tried for several days. The fundus was then held firmly in one position by pads of iodoform gauze packed tightly into the wall of the vagina, and the colpeurynter again inserted. During the night there were violent, labor-like pains, and the next day the fundus had disappeared from the vagina; the broad eroded vaginal portion was in the vagina; the vagina was tamponed for several days as a precautionary measure. Patient made a good recovery. L. R.

S. DOBBERT, TH.: PARTIAL SLOUGHING OF THE UTERUS AND VAGINA (*St. Petersburger Med. Wochen.*, June 21st, 1890).—The following cases are narrated:

CASE I.—Marie L., æt. 25, was normally delivered eight days previously by a midwife; shortly afterwards pains in the abdomen with fever set in, increasing greatly in intensity. On admission she had a pulse of 100, and temperature 39.6° C.; swelling and redness in the left parotid region, which was painful but did not fluctuate; abdomen slightly enlarged and quite sensitive; uterus enlarged; fundus as high as umbilicus; os patulous for two fingers; a quantity of dirty-colored, thickly-fluid, and foul smelling lochial secretion was discharged from the uterus; exudates all about the uterus very sensitive. Diagnosis: Gangrenous puerperal endometritis; septic peri- and parametritis. Irrigations with sublimate solutions. Temperature and pulse the same. The swelling in the parotid region fluctuated, was incised, and evacuated foul pus. On the 28th day post partum, after an intra-uterine irrigation, a freely movable mass of tissue was noticed in the cervix and removed. The temperature fell on the same evening, and from there on remained normal; patient improved greatly, and was discharged at the end of the fifth week. The expelled piece of tissue was about 8 cm. long, was of dirty gray color and covered with pus. At one end it was 5 cm. wide, becoming narrowed at the other extremity to about 2 cm.; was several millimetres to 1.5 cm. in thickness; on section it showed a uniform muscle-like character, with numerous vascular lumina; microscopically it was found to consist of smooth muscular fibres and increased connective tissue in a state of decomposition, with irregular cavities and innumerable colonies of cocci.

CASE II., age 22, was admitted on the 28th of March, 1890, with the diagnosis of puerperal endometritis and septic parametritis; had been delivered on the 18th by a midwife. Had a chill on the third day and increased pains in the abdo-

men. The latter was greatly enlarged and very sensitive. The uterus was relaxed and discharged foul-smelling, purulent fluid; very sensitive infiltrations around uterus. Pulse weak, 110; temperature, 40.2° C. With constant rise in temperature, weak and irregular heart action, somnolence, and delirium, patient died on April 3d. Intra-uterine irrigations had had no effect upon the symptom-complex. Post-mortem revealed septic puerperal endometritis and parametritis, metritis dissecans, pulmonary edema, parenchymatous degeneration of the spinal cord, liver, and kidney. The vaginal mucous membrane was covered with a thin diphtheritic coat. Uterus enlarged, relaxed; mucous membrane coated with a dark-brown diphtheritic layer. At the anterior surface, 2 cm. from its top, there was an almost circular opening, 5 cm. in diameter; in it there lay, freely movable, a piece of swollen and discolored uterine tissue about the same size. The parametrium on either side contained a number of cheesy foci; the serous coat of the uterus was somewhat clouded and studded with ecchymoses.

In both cases there was septic puerperal disease accompanied by the expulsion of circumscribed portions of tissue—a process hitherto rarely observed. There can be no question that the immigration and multiplication of cocci are etiological factors in this occurrence; yet it must for the present remain a question why only circumscribed portions of tissue fall victims to the process. It may be due to the nature and localization of the cocci and to their virulence; on the other hand, it may be that these processes being observed only since the introduction of antiseptics, in the pre-antiseptic age the change went on into necrosis and disintegration of the entire organ, but since then has become more localized.

Apart from the great possibility of infection during labor and the puerperium, there may be favorable conditions in the organism for the infection after many exhausting diseases, and the author cites a case which occurred after typhoid fever.

L. R.

9. FROMMEL, R.: REPEATED TUBAL PREGNANCY (*Deutsche Med. Wochen.*, June 5th, 1890).—In 1883 the author performed laparotomy upon a woman with right-sided, intra-ligamentary tubal pregnancy about ten days after fetal death. The ovisac was sutured to the lower angle of the abdominal wound, as signs of decomposition were apparent. After removing the slightly macerated fetus, a drainage tube was inserted through the ovisac into the vagina. Within fourteen days the placenta could be removed in several pieces without hemorrhage, upon which the ovisac rapidly diminished in size and in three weeks more closed by granulations. The pa-

tient rapidly recovered: the menses returned and remained regular. In May, 1887, the hitherto regular menses ceased, and from that time on she complained of violent pains, especially in the left side of the abdomen. Eight weeks after the cessation of the menses, while returning from a visit to her physician, she suddenly fell in the street in deep collapse, from which she recovered very slowly. The next day, accompanied by moderate bleeding, shreds of tissue were discharged by the uterus, which under the microscope were seen to be decidual tissue. The pelvis was filled with a tense, elastic tumor which dislocated the uterus forward and upward. Four weeks later severe symptoms of internal hemorrhage again supervened, after which a decided increase in the tumor's size could be made out. Shortly after the author saw the patient and found a pronounced retro-uterine hematocele. The patient very slowly recovered, and the tumor gradually grew smaller. There could be no question, says the author, that tubal pregnancy had again taken place, and that the ovum had been contained in the left tube, the right one being destroyed by the first pregnancy and its consequences.

What may the condition of the tubes be which predisposes to pregnancy within their lumina? Freund has shown that in some women the development of the tubes is permanently arrested at the fetal or infantile stage, in which the tube shows numerous corkscrew-like spiral windings, especially toward the abdominal end, which in many places lead to narrowing of the lumen or the development of diverticuli. It can readily be believed that the passage of the ovum should be hindered in such tubes; the lumina of the tubes may also be obliterated by hypertrophy of the mucous membrane. Some tubes, especially in deflection of the uterus and in pelvic tumors, undergo hypertrophy of their walls and mucous membranes, so that principally the connective-tissue stroma of the folds of the mucous membrane appear greatly hypertrophied without any evidence of small-cell infiltration.

L. R.

10. FREUND, W.: RUPTURE OF THE UTERUS (*Deutsche Med. Wochens.*, June 5th, 1890).—At the February meeting of the Naturwissenschaftlich-Medicinischer Verein in Strassburg the author read a paper with the above title and narrated the history of four cases.

1. Carcinoma of the cervix; pelvis normal; spontaneous circular tearing off of the cervix at the beginning of labor.

2. Multipara, 41 years old; rigidity of the soft parts of the parturient canal; no contracted pelvis; placenta previa centralis; spontaneous rupture below the contraction ring within the placental site; birth terminated by perforation of

the dead fetus; death from internal hemorrhage half-hour post partum.

3. Demonstration of the uterus of a XIIIpara. Death occurred in consequence of a large rupture from a neglected transverse presentation; the tear was transversely through the cervix, and then at right angles up into the fundus; no contracted pelvis.

4. Moderately contracted pelvis (rachitic); four normal labors; one time perforation because of excessive cervical stretching; sixth labor came on at full term; prolonged labor pains; the uterus ruptured in consequence of a fall against the bedpost; child escaped entirely into the abdominal cavity, extracted through the tear *per vias naturales*; laparotomy; large transverse rupture in anterior uterine wall at the level of the vesical attachment; the right round ligament torn; both uterine arteries spouting; suture of the uterus; tamponnade of the latter and the ante-uterine space; recovery.

The author concludes from these cases that, contrary to the prevailing views of Bandl, rupture of the uterus could take place even without disproportion in the pelvic space; that Bandl's explanation for uterine rupture will not suffice for all cases, and that we could not deny that some uteri have a disposition to rupture. As regards treatment, he recommends that adopted in Case IV. for cases at distances from institutions.

L. R.

11. GÖRDES, M.: PREGNANCY WITH NEOPLASMS (*Zeitsch. f. Geburts. u. Gyn.*, xx., 1).—Pregnancy complicated by new growths is a relatively rare occurrence, yet sufficiently grave to merit earnest study and elucidation. G. has gone over the material afforded by the past ten years in the private institute of A. Martin, and gives the histories of 16 cases; 20 cases of extra-uterine pregnancy which occurred during that period are not included in the category. If pregnancy is complicated by tumors, it is best to await events so long as the suffering is moderate and the site and nature of the growths favorable. It should be remembered that abortion is not feasible as long as the relationship of the new growth to the uterus is not yet perfectly recognized. On the other hand, it should be considered whether the tumors may not later become mechanical obstacles to parturition. As regards tubal and ovarian tumors, their removal is at once indicated, if complications—for instance, extensive adhesions with the uterus—do not render this impossible; pregnancy is not altered thereby, but the gravid uterus is protected from the danger arising from the growth, whether it be diminution in room or nutritive disturbances from torsion of the pedicle. The tumor often tends to produce abortion by pressing on the

space necessary for the growing uterus. The danger is greater in new-formations of the uterus itself, principally myomata. Nine such cases were noted by the author. One case, that of a woman 29 years old, primipara, was in the sixth month with myomata of the cervix and fundus uteri. Isolated removal was impossible. The expectant plan was dangerous because of threatening symptoms, puerperal involution of the tumor was hoped for, and Cesarean section was therefore done. Good recovery. The tumor was much smaller two and one-half months after operating. Artificial labor was not induced in this case because the pelvic outlet was very much narrowed by the large tumor. The greatest danger during labor is in the enormous hemorrhages which may occur, especially when the placenta is implanted at the base of the tumor, the rigid tissues of which hinder the contractions. Subserous myomata are most readily amenable to treatment by laparotomy, and it is especially important with them to decide whether expectancy will be safe. If they are well pediculated, we should operate; if they are broadly sessile, it is best to await events as long as compression of the uterus or its adnexa does not set in. If it should be feared, or occurs, the removal of the growth is proper.

Regarding the so-called malignant new growths of the uterus, the carcinomata, the question of diagnosis and treatment is much more simple than with myomata, as the diseased parts are accessible to the examiner's finger; when the carcinoma is situated in the ovaries or the abdominal viscera, the diagnosis may be rendered very difficult.

L. R.

12. TANNEN, A.: CONTRIBUTION TO THE STATISTICS, PROGNOSIS, AND TREATMENT OF UTERINE CANCER (*Arch. f. Gynäk.*, xxxvii., 3).—From June, 1883, to the middle of November, 1889, 103 total extirpations were performed for uterine cancer at the Breslauer Universitäts-Frauenklinik, which the author has carefully tabulated, and from the individual and aggregate study of which he makes valuable and practical deductions. Of these 103 cases 10 died, making an average mortality of 9.7 per cent. Comparative statistics show that during the last few years the mortality sank from 11.6 per cent to 6.9 per cent, as of these 103 cases 60 had been previously reported by Fritsch with a mortality of 11.6 per cent, while the later 43 cases gave a mortality of but 6.9 per cent. The author makes the following conclusions:

1. A cure of uterine cancer by vaginal total extirpation is possible, but is always of transient duration.

2. The radical removal of cancerous uteri shows a large number of temporary cures.

3. In infiltration of the parametria and rigidity of the ligaments total extirpation is contra-indicated.

4. All incomplete operations for the radical treatment of uterine cancer, except during pregnancy, should be discarded, and vaginal total extirpation be resorted to instead.

L. R.

13. TRACOU, PIERRE: THE INFLUENCE OF HIP DISEASE UPON THE SHAPE OF THE PELVIS (*Monograph, Bigot Brothers, Lille, 1890*).—After a careful review of authoritative opinions in regard to the influence of coxalgia upon the shape of the pelvis, and an analysis of the most interesting cases that have been reported, the author reaches the following conclusions:

Coxalgia, when cured without suppuration during its first or second period, leaves little or no trace upon the conformation of the pelvis.

In its third period coxalgia will have the more influence upon the shape of the pelvis as suppuration shall have lasted longer and the unhealthy side shall have been less able to bear the weight of the body.

Through the excess of pressure borne by the healthy cotyloid cavity, the narrowing will occur upon the healthy side, the side upon which the coxalgia exists being comparatively larger but not normal.

Coxalgia complicated with sacro-coxalgia produces an oval pelvis with sacro-iliac synostosis; the excess of pressure may also bring about a union of the iliac bone to the sacrum.

From the standpoint of the shape of the pelvis, the best treatment consists in continuous extension with immobilization, in order to bring about a rectilinear ankylosis. Resection, in cases that can no longer be helped except by operative measures, gives results superior to that of coxalgia that is not treated. Recurrences of coxalgia under the influence of pregnancy are rare.

In most cases delivery will occur spontaneously. The diagnosis, however, must always be made with care, as the narrowing might prove to be considerable and the fetus may present unfavorably, as, for instance, in the narrow part of the strait. An application of the forceps will be needed, if it is possible; failing this, version seems to be indicated. But if the diagnosis have been made early enough, a premature delivery is to be preferred.

v. s.

14. STRASSMAN, P.: INFLUENZA IN THE NEW-BORN (*Zeitsch. f. Geburts. u. Gynäk.*, xix., 1).—Among 20 new-born infants in the Lying-in Institute at Giesen in January of this year, 8 became ill with symptoms which, taken in connection with

the prevailing epidemic, pointed clearly to influenza. The literature of the latest as well as previous epidemics is entirely silent upon this subject, as well as the literature on diseases of the new-born. The diagnosis is particularly difficult, as in this class of little patients we cannot reckon upon important diagnostic factors—pains in the limbs, sensations of exhaustion, sudden onset, etc. Another important aid is lost to us, namely, the fever curve; the new-born infant does not yet possess the energy of heat production common to the adult, but is, on the contrary, prone to decided cooling off. The temperature was taken per rectum twice daily, giving a curve which presented no similitude to that afforded by the adult sick with influenza. Some of the infants showed a lowering of the temperature, a phenomenon attributable to diminished activity of the lungs. All the children had temperatures below 35° C.; in 3 it did not go above 34° C., and one child, in whom pneumonia superseded the influenza, cooled off to 32.1° C. per rectum. For purpose of comparison the temperatures of the well children were also taken; the lowest was 36° C., the heat generally oscillating between 36.3° C. and 37.1° C. Two children (one after the subsidence of the epidemic), one of whom had suffered from a specific coryza, the other from an ordinary "cold," presented normal temperatures.

In all cases the course of the disease was such that the healthy-born, mature child, which had for several days performed all its functions in normal manner, began to be restless, crying much and sleeping little. Greenish-yellow fluid was discharged from the nose (the surroundings of which were often reddened), which gathered in scales about the nostrils; the breathing was accompanied by snuffling noises, occasionally taking place by the mouth; the voice was hoarse, the crying frequently interrupted by paroxysms of coughing. On the second or third day aphthæ regularly set in, the digestion showing evidence of disturbance at the same time, constipation, generally diarrhea, setting in. Respiration and pulse were moderately increased; with this the temperature frequently fell, as if it were that greater activity of the heart and lungs sought to compensate for the cooling-off of the body. The feeding of the infants was made difficult, primarily by the embarrassment of suckling caused by the occluded nose; the children all failed to increase in weight during from ten to twenty-two days, some even losing. Regarding sex, of 13 males, 6, and of 7 females, 2, were affected. The earliest outbreak of the disease occurred on the third day after birth, the last on the fourteenth day. The affection lasted in 5 cases from three and one-half to four days; in 2 cases it could only be observed for two days; in 1 case pneumonia

occurred on the fourth day, from which the child perished. Mild conjunctivitis took place in 2 cases, disappearing without treatment; a third child, which had suffered from blennorrhoeic conjunctivitis which had already disappeared in one eye, presented, besides the other symptoms of la grippe, a sudden exacerbation of the inflammatory process in the eye.

As regards the mothers, two had gone through the influenza during the last months of pregnancy; a third was strongly affected with the malady from the seventh to the ninth days post partum, her infant taking sick on the tenth day.

L. R.

15. AHLFELD, F.: THE INDUCTION OF PREMATURE LABOR. 118 CASES (*Central. f. Gyn.*, July 26th, 1890).—This number of cases came under the management of the author or of his assistant from 1871 until 1890. Contracted pelvis was the indication for this procedure in the great majority of the cases—111; 7 were operated because of disease of the mother. The pelvic configurations were distributed as follows: Generally contracted pelvis, more or less typical, 26; generally contracted pelvis of rachitic origin, 33; rachitic pelvis, not or only moderately generally contracted, 24; simple flattened pelvis, 13; ankylotic, crooked, contracted pelvis, 4; bilateral luxation pelvis, 2; funnel pelvis, 2; pelvis with osteomalacia, 2; spondylithetic pelvis, 2; 1 pelvis was designated only as "contracted"; 2 were normal, only relatively narrow. Regarding the degree of contraction, but 92 furnished any data. In 10 the conjugata vera measured less than 7 cm.; in 57 between 7 cm. and 8.5 cm.; in 25 between 8.5 cm. and 9.75 cm. The average of all the conjugates was 7.97 cm. There were 121 children (three times twins) born, of which 102 were alive when extracted; 19 were dead; 18 died before the expiration of the first twenty-four hours, 9 before the discharge of the mother (tenth to twelfth day); 75 were discharged alive. Of the 10 cases where the conjugate was less than 7 cm. none of the children was delivered alive; of the 57 cases of from 7 cm. to 8.5 cm., 38 were alive on discharge; of the 25 cases of from 8.5 cm. to 9.75 cm., 21 were discharged alive. The average weight of 105 children delivered through contracted pelvis was 2,743 gm., the average length 47.51 cm. Of the mothers, 1 died in consequence of the labor; in addition 4 died in the clinic (eclampsia, tuberculosis, heart failure). In 75 cases the puerperium was non-febrile.

The method adopted was in the main that of Krause—the introduction of a flexible bougie, sometimes with preliminary preparations, sometimes without. The latter, which in some cases sufficed of themselves, consisted of: 1, the introduction

of a colpeurynter; 2, tamponnade of the vagina with iodoform gauze and cotton; 3, plugging the cervix with iodoform gauze (non-successful); 4, laminaria; 5, hot douches (very frequently this method excited labor, but the pains remained very feeble; the following adjuvants were then resorted to); 6, separation of the lower segment of the ovum; 7, Tarnier's tampon; 8, rupture of the bag before complete opening of the os; 9, full bath, followed by sweating; 10, version after Braxton Hicks. The following complications occurred: (a) premature rupture of the membranes—the bougie rarely perforated the ovisac; (b) violent hemorrhage three times, twice from low implantation of the placenta, once because of the vulnerable condition of the mucous membrane of the introitus; (c) fever before the birth of the child twenty times, only twice before rupture of the membranes. It generally subsided after antiseptic irrigation. Where the fever persisted the child generally perished. The fever was probably septic, due to the action of ptomaines. The following conclusions are formulated by the author: 1. The induction of premature labor sustains its position as a life-saving procedure, despite essential improvements in the results from Cæsarean section; 2. The method is also practical in private dwellings, but the chances are far better in a maternity hospital; 3. The induction should be practised as late as possible; 4. The lowest limit of pelvic contraction for the procedure is a conjugata vera of 7 cm.; 5. The artificially induced labor should approximate the normal mechanism as nearly as possible.

L. R.

16. ROSTHORN, A.: FORTY CASES OF REMOVAL OF THE UTERINE ATTACHMENTS (*Arch. f. Gyn.*, xxxvii., 3).—The youngest patient was 19, the oldest 40 years old. There is a decided period of predilection between the 23d and the 28th years, 20 of the cases operated upon being at that time of life. Eleven of the women were married; the 29 unmarried women belonged in greater part to the poor or the pauper classes; the most were domestics, who worked very hard; 3 were prostitutes. Regarding pregnancy, 12 had never been so; 16 had given birth once, 4 twice, 1 six times, and 1 eight times; 4 had aborted once, 2 twice. Concerning etiology, puerperal affections produced the greatest sum, 14 out of 40; only 8 could be proven to be of undoubted gonorrheal origin. The duration of the illness for which patients were operated was from several months to twelve years. The menstruation in all cases had always been regular up to the onset of the disease. More than half suffered from menorrhagia and atypical bleeding; amenorrhea since the onset of the illness existed in but 1 case. In 13 there was accom-

panying pelveo-peritonitis. The uterine implication was evidenced by the atypical bleeding from disease of the endometrium and the accompanying enlargement of the uterus.

The diagnosis was made from the histories and the objective condition. Pain was the most prominent and a never-failing symptom, and one which brought the patients to the wards for relief. The typical site was the ovarian region, more rarely over the symphysis. The description of the pain by the patients regularly coincided with the side principally diseased. Radiation of the pain to the limbs and the loins was frequently complained of. In almost all cases, even in those in which there was no deviation of the uterine axis, there was decided pain in the back. The size of the growth was in no relation to the intensity of the pain. The most weight, of course, was attached to the objective find. In many cases, notwithstanding repeated careful examinations, it could not be determined whether the tubes or ovaries comprised the main portion of the swelling, and such cases were characterized as "chronic inflammation of the attachments": a number of the specimens removed showed that any other designation would have been inaccurate, yet in many positive differentiation was possible. The tubal abnormalities presented greatly altered, twisted, sac-like tubes, always increasing in size toward the abdominal ends, occasionally segmented by contractions with flask-like dilatations. The indications for operation were, after Hegar, as follows: 1. Advanced alterations in the ovary—swelling, malposition, cystic degeneration, increased sensibility on pressure; 2. Chronic inflammation of the tubes, with advanced alterations (perimetritis, adhesions of the retroflexed uterus, perisalpingitis, perioophoritis), with a tendency to relapse. As contra-indications, acute inflammation of the uterus, its attachments and surroundings.

The preparations for operation were those employed by Breisky in laparotomy. Antisepsis was simple; the hands were disinfected with alcohol and sublimate; the instruments were sterilized for thirty minutes at 100° C. and then placed in 3% carbolized solution; instead of sponges, small pledgets of dry sublimate gauze were used; larger cloths of the same material were employed to hold back the intestines. The operation was never done at the time of the menses. Chloroform was regularly used as the anesthetic. The dorsal position, with greatly elevated pelvis and lowered trunk, was found the most serviceable. The operative routine consisted of: 1. Opening of the abdominal cavity. 2. (a) Palpation of the pelvis, in order to map out the relations of the parts; (b) Separation of the adhesions to neighboring organs, and removal of the diseased parts; (c) Care of the stump. 3. Clo-

sure of the abdominal wound, dressing. I. The opening into the abdominal cavity was always by incision through the linea alba. The opening through the parietal peritoneum was carefully made by incising through a fold caught up by a pair of forceps. Eventration never took place. II. If the peritoneal opening would admit a hand, the latter carefully felt the fundus uteri and the attachments pushed up by the assistant. Adhesions were first separated. In the less severe cases the removal of the adnexa was similar to a typical castration. In the more numerous severe cases, however, a different procedure was necessary; it was begun with severing adhesions at the uterine cornua, carried onward with progressive ligation of the middle segment of the broad ligament up to its base, and finally ended at its lateral parts. The adhesions in the cul-de-sac of Douglas at the closed ends of the tubes could be boldly severed with the fingers; the infundibuli were thus frequently opened and some of their contents escaped, without harm to the patients. Tense cystic growths were also occasionally ruptured. III. For cleansing purposes it sufficed to wipe out the pouch of Douglas with dry sublimate gauze; the great omentum was spread out under the abdominal wound to prevent intestinal adhesions; the wound was closed by three rows of sutures; a drain was inserted only four times, and consisted of iodoform wick. Secretion was copious. On the third day a portion of the wick was removed; the remainder some days later. The reaction after the sometimes violent procedures was comparatively moderate; exhaustion was limited to a few cases of the gravest nature. The patients remained without nourishment for forty-eight hours after operation, the first twenty-four hours also without drink; later, iced fluids (mineral waters, then wine, then milk) were given in small quantities every half-hour. Solid food was not given until the bowels acted; the latter was encouraged by the use of the rectal tube and clysters of chamomile tea. The use of the vesical catheter was avoided, and very seldom found necessary. The dressings remained undisturbed until the eighth or tenth day, the sutures being removed at the same time; the wounds always united by primary intention. Neither general sepsis nor septic peritonitis was observed in these 40 cases. The 2 deaths which occurred were due to perforating peritonitis. The results of the operation are summed up by the author as follows:

I. Complete ideal cures, with removal of all suffering, in 20 cases.

II. Successful in general, but not ideally so, in 13 cases, in which symptoms recurred later, but which could also be due to the anticipated climacteric.

III. Temporary cure in 1 case, in which all the symptoms recurred in two months.

IV. The development of diffuse exudates temporarily interfered with cure in 2 cases, which later became thoroughly relieved.

V. Death from perforating peritonitis in 2 cases.

VI. One patient on her discharge was in the best of health, but no further observations could be made, the patient disappearing.

L. R.

17. FLAISCHLEN, N.: ON HYPEREMESIS GRAVIDARUM (*Zeitsch. f. Geburts. u. Gynäk.*, xx., 1).—The author has gone over the literature of this subject during the past years, and finds the following causes given: 1, actual disease of the gastro-intestinal tract, which the gravidity complicates; 2, inflammatory diseases in the neighborhood of the uterus; 3, malposition of the organ; 4, the uncontrollable vomiting is to be regarded as a reflex neurosis of the stomach, originating from an entirely normal gravid uterus, or excited by pathological processes in individual parts of the uterus. F. has observed two cases during the past year.

CASE I.—Mrs. L. was seen by him in February, 1888; she had begun to vomit early in January, and complained of copious salivation; these symptoms constantly increased. The attending physician had tried a host of remedies without avail. On the 20th of February he practised dilatation of the cervix after Copeman, and ordered rectal alimentation; patient felt a little better for some days, but then became somewhat worse. On the 27th the pulse was 140, temperature 37.0° C. F. saw her first on the 29th. Patient was greatly emaciated, and too weak to raise herself in bed. Pulse oscillated between 120 and 140, very small. The uterus was markedly large for that stage of gravidity (second month); was normally anteflexed; adnexa free. Ordered dorsal decubitus, nutrient enemata, ice pills, morphine subcutaneously in the epigastrium. By March 3d patient was still worse; great unrest, insomnia, unceasing vomiting; pulse 140, very small. The author concluded to induce labor, as he was convinced that otherwise there would be a fatal ending. The same evening a laminaria tent was introduced into the cervix; the next day two. By March 5th cervix was patent for one finger. Anesthetic given. On rupturing membranes, a copious quantity of water escaped; twins in the third month of development were removed; the decidua was abnormally thick and greatly hypertrophied; the puerperium was normal; the patient suffered the next few days with occasional vomiting, but her condition was satisfactory; by the fifth day vomiting had entirely

ceased and the appetite returned. The following January, when F. again saw her, she was enjoying excellent health.

CASE II.—In June, 1889, F. was called in consultation to see Miss E., 28 years old; she had aborted the previous year; last menstruation in December, 1888. In February, 1889, she was operated upon by Mikulicz for bilateral floating kidney; she felt very well after the operation, and made a long railway journey without any discomfort. The attending physician was called to her early in June, and found her suffering greatly. Uterus greatly enlarged, the intestines and stomach very much distended; no fever; copious vomiting; constipation for seven days. Was given ice pills, morphine, Carlsbad salt; felt better for a time, and then became worse; bromide of potassium, morphine, chloral, and opium were successively given without success. On the 18th the author saw the patient; she appeared moribund; the voice was husky, eyes deeply sunken, hands ice cold, pulse almost imperceptible, about 120; the uterus was conspicuously broad and large; cervix patent for one finger; patient vomited uninterruptedly.

He at once prepared to induce artificial labor; on puncturing the membranes a quart of amniotic fluid escaped; during the night following the patient vomited but twice and retained some wine and coffee; the attendant had also given her an injection of ether. On the 19th there was no improvement in patient's strength; pulse almost imperceptible; cervix dilated to about the size of a quarter. After the somewhat difficult delivery of a fetus measuring 36 cm. a second ovisac presented; it was punctured and about a quart of fluid escaped, followed by the birth of the second fetus, also 36 cm. in length. Placenta expelled without hemorrhage. Patient died at 7 P.M. the same day. The post-mortem examination showed the urinary channels to be normal. There were slight stenoses in the small intestines.

It is certainly a peculiar coincidence that in both cases of hyperemesis twin pregnancy existed; in both there was immoderate increase in the size of the uterus, especially in the width of the fundus. The author also gives the histories of 3 cases of Paul Ruge, 2 of which died, making 5 cases in all, with 3 deaths. In 2 cases the rapid onset of abortion rescued the patients from certain death; in 2 cases this procedure could not avert the threatening fatality. The author believes that in many cases interference comes too late.

L. R.

18. MICHNOW, S.: CONTRIBUTION TO THE DIAGNOSIS OF SALPINGO-OÖPHORITIS (*Central. f. Gyn.*, August 9th, 1890).—Cases occur frequently where the characteristic tumor cannot

be clearly defined at the beginning—for instance, where the tubal tumor lies in the lower portion of the broad ligament, or is fixed in the pouch of Douglas by large adhesions; or, again, only the outer end of the tube may be dilated, the remainder being normal, in which case, if no adhesions exist, a movable, circumscribed, elastic growth, resembling an ovarian tumor, is palpated. It is, therefore, important to keep in view all the diagnostic aids which may lead us aright. Prof. A. S. Lebedeff has encountered the following peculiarity in inflammatory salpingo-oöphoritic swellings: Occasionally we find symptoms pointing to salpingo-oöphoritis of one side—say the right—the other side presenting only adhesions, bands, or indistinct nodules. If the same patient be examined again after some time, the tumor may be found completely collapsed, while instead, upon the other (left) side, a swelling is distinctly mapped out. These variations in the dimensions of the tumors are dependent upon the menstrual periods; that is, at the beginning of the flow the tumor increases in size, afterwards it becomes smaller or may disappear. Sometimes the swelling is unilateral, the other side remaining collapsed. With the following period the first swelling may remain unaltered, while the one on the other side increases greatly in size. This oscillation is more demonstrative in tumors of small dimensions, and affords a very weighty argument in differential diagnosis.

L. R.

19. FRANK, K.: CONTRIBUTION TO THE INDICATION FOR VAGINAL EXTIRPATION OF THE UTERUS (*Zeitsch. f. Geburts. u. Gyn.*, xx., 1).—The author reports 10 cases of vaginal extirpation of the uterus for myomatous degeneration, and 7 cases of prolapse of vagina and uterus in which total extirpation preceded colporrhaphy.

CASE I.—Miss P., æt. 34, with a myoma at the anterior wall of the fundus the size of a walnut; endometritis fungosa: liquor ferri, ice bag, and hot injections were tried for the bleedings without success. The vaginal extirpation was rendered very difficult by the narrowness of the vagina and the infantile contour and size of the uterus. Good recovery; gradual improvement in the anemia.

CASE II.—Miss D., æt. 39, with multiple small myomata in the fundus uteri; local medication useless; extirpation of the uterus and ovaries; convalescence disturbed by the alcohol habit, but eventual recovery. Patient married three and one-half years later.

CASE III.—Mrs. H., complaining of menorrhagia followed by profuse leucorrhea. Dilatation, curetting, and local applications tried for years. There was a myoma the size of a small apple at the anterior wall of the uterus. Ope-

ration difficult, lasting one hour; good recovery, with subsidence of symptoms.

CASE IV.—Mrs. St., æt. 45; sterile three years. Has had menorrhagia for two years, leading to profound anemia; myoma size of an apple at the fundus uteri, projecting into the cavum uteri. Attempt was made to remove the myoma per vaginam, but failed. Total extirpation per vaginam very laborious, but good recovery.

CASE V.—Mrs. G., æt. 45; profuse menstruation; myoma size of an apple at the fundus; great anemia; fungoid endometritis. The operation was difficult because of the toughness of the pelvic floor. Good recovery.

CASE VI.—Mrs. N., æt. 45; sterile; violent pains in a cicatrix remaining from extirpation of the cervix. Increasing hemorrhages for a year; mitigation of pain during bleeding; intramural myoma in the body of the uterus the size of a walnut. Extirpation difficult because of narrow vagina and non-elasticity of the broad ligaments. Complete recovery.

CASE VII.—Mrs. G., æt. 56. Copious hemorrhages, profuse leucorrhea, bloody stools; kyphotic, decrepit woman; pelvis filled with nodulated masses; moderate fungoid endometritis; operation. Large rents in pelvic peritoneum. Both ureters ligated and suturing of the tears. Patient died of collapse on third day. Ureters pervious and urine in the bladder. Profound anemia and senile atrophy.

CASE VIII.—Mrs. L., æt. 52; glandular endometritis; great anemia; large fundus; myoma in posterior wall of cervix and fundus; operation. Difficult removal of uterus; no drainage; union normal; complete recovery.

CASE IX.—Mrs. Sch., æt. 49; profuse menorrhagia, emaciation, great pain, and anemia; extirpation without difficulty, during the progress of which a small myoma situated under the peritoneum, at about the level of the third lumbar vertebra, was also enucleated. Patient collapsed shortly after the operation, but rallied, to perish of broncho-pneumonia nineteen days after operation.

CASE X.—Mrs. W., æt. 45; profuse menorrhagia; great glandular endometritis; extensive papillary erosions; numerous myomata in the wall of the fundus; high grade of anemia. Operation, with moderate loss of blood; complete recovery.

In all these cases the various non-operative measures had been given faithful and prolonged trial before resort was had to the knife. Ergotin treatment had in many cases been tried, and was not resumed when the patients entered the wards; the electro-therapeutic treatment was also not tried, because of its uncertainty, the patients being generally in such condition as to demand radical procedures. The seven cases of

prolapse of uterus and vagina all enjoyed perfect immunity from previous symptoms and good health after the operations.

L. R.

20. MENSINGA: RETENTION OF THE PLACENTA FOR TWENTY-FIVE DAYS POST PARTUM WITHOUT DECOMPOSITION (*Der Frauenarzt*, v., 7).—Mrs. W. had been delivered on the previous day of a four months' fetus without any bleeding; the waters had escaped prematurely, and the labor was almost dry. The placenta was retained. The woman was without pain; there was hardly a trace of blood in the vagina; the os was completely closed. He advised to await events, patient to remain in bed, and to be irrigated twice daily with solutions of creolin. The woman refused to remain in bed longer than four days, and said she felt all right; blood-tinged serous fluid constantly escaped from this time onward, with frequent backaches. On the twenty-fifth day the author happened to enter her dwelling just as she had been surprised by a copious hemorrhage. She was at once put to bed. The os was patent for the small finger. M. hurried home to get his instruments, during which time a midwife was summoned for assistance. Patient was very pale and faint; a colpeurynter was first introduced into the vagina to control the hemorrhage, after which patient was put in the knee-elbow position, the colpeurynter removed, a Sims' speculum introduced; the vagina was wiped out with salicylated cotton, iodoform gauze pushed up into the uterus and held in place by a sound introduced after it; the rest of the cavity was then filled with iodoform gauze by the disengaged hand, and the vagina was also firmly tamponed. Bleeding ceased, only a dribbling taking place. The next day it was evident that several hemorrhages must have occurred. The tampon was removed piece by piece, with the patient in the knee-elbow position, when the placenta was found in the os; it was still somewhat adherent, but came away upon careful traction with a forceps. It had the contour of a duck's egg when it was folded together. It was remarkable that not the slightest trace of decomposition existed, the mass having the odor of fresh blood. As the hemorrhage did not completely subside, iodoform gauze was again packed in, and was allowed to remain twenty-four hours; the bleeding had then ceased. Daily irrigations with solution of creolin; no fever; the appetite was good. It is possible that the absence of decomposition was due to the tight closure of the os externum, as well as to the close connection between the placenta and uterus. M. thinks that he would have subjected the woman to greater danger by premature, forcible dilatation of the os, and scrap-

ing out of the placenta, than was afforded by the sudden copious hemorrhage.

L. R.

21. FLAISCHLEN, N.: THE RADICAL OPERATION FOR CARCINOMA UTERI (*Deutsche Med. Wochen.*, July 24th, 1890).—We now know that good results may be achieved by all of the methods which have come into vogue since the radical treatment of this malady has become a recognized procedure. Questions of general interest which are to-day of paramount prominence are: 1. What are the permanent effects and final results of total extirpation for the removal of uterine carcinoma? 2. When is uterine carcinoma still amenable to operative treatment, and when not—what are the limits for the performance of the radical operation? It will doubtless take years before these questions receive conclusive and unanimous solution. The author describes 20 cases of total extirpation of the uterus and 2 of supravaginal amputation undertaken with the co-operation of Paul Ruge. Of the 20 total extirpations, 3 died of sepsis; 7 died of relapse in the course of the year. Of the total 22 cases, 11 have remained well up to the present time. In 17 of the total extirpations the method pursued was essentially that of A. Martin: 1 case was complicated by a myoma; in 2 carcinoma of the cervix and of the fundus was found. Only such cases should be operated in which there is a probability of radical recovery. There will always be a number of cases in which, even when examined under anesthesia, it will be difficult to decide whether the surroundings of the uterus are intact. If the broad ligament or the recto-uterine ligament is distinctly infiltrated, we must positively desist from operating; but frequently one finds thickenings in the broad ligament which give a non-malignant impression, in which, however, it may be doubtful whether they do not contain proliferations of the carcinoma. Three of Ruge's cases showed this relationship, two of which have as yet remained well. After what limit of time may a patient operated upon for uterine carcinoma be regarded as permanently cured? Volkmann considers that freedom from relapse for three years constitutes certain recovery. Fritsch increases this time to six years. During the past years supravaginal amputation has been more and more displaced by total extirpation. The latter operation has lost many of its attendant dangers, and is certainly no more hazardous than supravaginal amputation.

L. R.

22. VONDER GOLTZ, E.: FRESH SUTURING OF CERVIX AND PERINEUM (*Medicin. Monatsch.*, N. Y., v. ii., 8).—The author prefers the Hagedorn needle holder above all others.

Immediately after the completion of labor the patient is chloroformed and placed in the dorsal decubitus. A tampon is placed in the vagina in order to obtain a freer field for operation. Assistants separate the legs, and the tear is made to gape widely in order that irregularities in the rent or spouting vessels may be noted and properly treated. Catgut is generally used for suturing. The suture employed is the modified one of Hepper. In most cases of perineal lacerations the cervix was found similarly torn. He sutures every cervical laceration, employing catgut.

L. R.

23. SPAETH, F.: LESIONS FROM COITUS (*Zeitsch. f. Geburts. u. Gyn.*, xix., 2).—Three cases are given by the author.

CASE I.—Mrs. W., æt. 31, was always well, and had never noted any abnormality of the rectum: defecation had always been normal and regular. She married in January, 1889. During the first two days she had moderate pain during coitus and insignificant bleeding thereafter: but on the 31st of January she experienced excessive pain during intercourse, and had the sensation as if the penis were forcing a wrong channel. Copious bleeding followed. Three days later flatus escaped from the vagina, and on the fourth day feces. Since then coitus has been excessively painful, followed by the escape of feces from the vagina. After a time all flatus and a moderate amount of feces followed this passage. Occasionally, though very rarely, normal coitus could be effected. Examined on August 28th, she presented a normal pelvis; external genitals well developed; hymen perforated; vagina readily accessible; the somewhat thickened columna rugarum posterior was torn away from its attachments to the perineum. When lifted up by a tenaculum, a vaulted opening with smooth edges and about the size of the little finger was observed, from which fecal masses protruded. It led to the rectum, as shown by a catheter introduced from the anus. The anterior rectal wall was perforated to about the breadth of two fingers. Perineum was normal. The uterus was anteflexed, its adnexa healthy. The edges of the rectal opening were freshened and closed by concealed catgut sutures applied in the long diameter of the gut. The recto-vaginal septum was then united by several catgut sutures, and finally the separated columna rugarum was secured in its old position by several sutures. Large doses of opium were given to confine the bowels. Despite this it was evident, after a few days, that the intestinal contents passed through the wound, which had probably opened because of the too rapid resorption of the catgut. Gradually the original state of affairs again set in, and a second operation was done. This time the recto-vaginal septum was trans-

versely split, as in Tait's operation, and two flaps marked out at right angles to this transverse incision, dissected off, and partly removed. The rectal wound was then closed by catgut sutures, and the recto-vaginal septum united transversely over it by continuous catgut sutures. The columna rugarum posterior was attached by several sutures. Union was in great part primary. A small rectal fistula which developed at the beginning closed up in several weeks. Hegar's glass tubes were introduced in increasing bulk to dilate the contracted vagina.

The origin of this case differs from that of others (five) reported, in that the injury did not take place during the first coitus, but later on. There was no rigidity of the posterior hymenal parts, no narrowed vaginal entrance; the recto-vaginal septum was of normal strength and thickness; the pelvic inclination was normal.

CASE II.—Mrs. H., æt. 28, underwent a severe instrumental labor on August 10th, 1880, resulting in complete tear of the perineum deeply into the rectum. She was operated in December, 1881, after Simon's method; uninterrupted healing. During the third night after her discharge the house physician was called to her house because of profuse hemorrhage, which was controlled by tampons. The next morning the operator, on removing the tampon, discovered a fresh hemorrhage from a tear in the vagina about 3 cm. wide, running transversely in the posterior vaginal wall at the site of its merging into the portio vaginalis; arterial bleeding at one angle of the wound. After thorough cleansing the wound was sutured and healed by first intention. She at first denied having copulated, but later acknowledged it; the woman was small and delicate, the man robust and addicted to drink.

CASE III.—Mrs. O., æt. 28, married in 1887. First labor in July, 1888; the child was extracted by a midwife in breech presentation, during which total perineal rupture occurred; the tear included $3\frac{1}{2}$ cm. of the rectum. In October, 1890, she was operated by Prochownick; primary union. She was discharged on November 11th, and cautioned against indulging in coitus for some time. Several days later severe hemorrhage took place; there was a transverse tear in the vagina at the posterior vault; union under iodoform gauze tampon. The cause of the accident was proven to have been forbidden coitus. In this case there was obvious disproportion between man and wife. It is remarkable that in both cases the freshly united tissues did not give way, but that the vaginal vault ruptured both times—probably to be explained by the shortening of the posterior vaginal wall by the operation.

L. R.

24. ORTHMANN, G. D.: ON "KRAUROSIS VULVÆ" (*Zeitsch. f. Geburts. u. Gynäk.*, xix., 2).—The histories of five cases are given which were observed in A. Martin's hospital.

CASE I.—Miss Z., æt. 24, well nourished, medium-sized brunette, suffered for two years from a purulent discharge following gonorrheal infection; had never been pregnant. The vagina was moderately wide; portio conical, os closed, the cervix very much elongated; body small, anteflexed, adnexa free. Vaginal mucous membrane intensely reddened. Diagnosis: Colpo-endometritis. The colpitis was cured by appropriate treatment, but the endometritis persisted. In February, 1886, the diseased cervical mucous membrane was excised; only temporary success; the vaginal mucous membrane was again reddened and coated with a white fluid secretion. On the patient returning after prolonged absence, the appearances were remarkably altered; the introduction of the speculum was very painful, and was followed by superficial tears in the mucous membrane of the introitus and the posterior commissure; these tears occurred every time the speculum was introduced. The labia majora were thicker than formerly; they had entirely lost their reddish color; they were whitish, glistening upon their surfaces. The thickening increased regularly while the patient was under observation; the labia took on epidermic characteristics; the labia minora became smaller and smaller, almost disappeared, as well as the frenulum of the posterior commissure. The patient stated that immissio penis was impossible and the attempt extremely painful. Patient refused operative treatment and disappeared.

CASE II.—Mrs. Z. D., æt. 49, had suffered from pains in the left side of the pelvis for the past nine months, with severe burning and itching in the vulva; fluor moderate. Had given birth three times; the labors were easy; the last one took place fourteen years ago. The labia majora were covered in places with separated, whitish, and dry-looking epidermic shreds; between them were greatly congested places, partly denuded of epidermis, partly ulcerated. The labia minora appeared only as lower lengthened folds. The introitus vaginæ was very narrow. The disease extended anteriorly to the clitoris, posteriorly to the perineum. The portio was short, bilaterally slightly torn; on the left side several cicatricial bands went off to the vaginal vault. The body was anteflexed. There were no alterations discernible in the adnexa. The cervix was slightly open, its mucous membrane greatly reddened; urine was normal. Diagnosis: Kraurosis vulvæ, chronic metritis and endometritis, cicatrices in the vaginal vault. In November, 1887, excision of the cervical mucous membrane, as well as the separation of the vaginal bands, was performed; the curetting showed only moderately altered mucous membrane;

the cicatrices were separated and the cervix set free; the mucous membrane was then excised from the posterior lip and the wound closed by catgut button sutures; the mucous membrane of the anterior lip was then excised and sutured. From both sides of the rima strips of epidermis about 4 cm. wide were separated from the labia majora, beginning at the clitoris and including it; the exposed surfaces on the posterior borders of the vulva were sutured with catgut button sutures, upon which the rather copious hemorrhage ceased. The patient was discharged cured on the fourteenth day; the wound was well healed and the symptoms entirely removed.

CASE III.—Mrs. St., æt. 26; married; sterile for three years; suffered from dysmenorrhea; complained of severe burning and itching in the vagina, and violent pains during coitus; moderate discharge. The external genitals were remarkably pale and cicatrix-like in appearance. The labia majora terminated on both sides posteriorly in a conspicuously shrivelled cuticular surface, which included also the region of the posterior commissure and the perineum. The parts were highly sensitive. Upon the most careful attempt at unfolding the vulva superficial lacerations took place, which pained excessively but bled very little. The anterior border of the vulva was moderately reddened and slightly sensitive; the vagina was greatly narrowed; the uterus was small, ante-flexed; the left ovary was chronically inflamed; the tube was thickened; the right ovary appeared to be normal; the mucous membrane of the vagina, portio, and cervix was reddened and covered with tenacious, thickly fluid, whitish secretion. Diagnosis: Kraurosis vulvæ, endometritis, salpingitis, oöphoritis chronica sinistra. Operation as in the previous case. Prompt union. Symptoms entirely disappeared.

CASE IV.—Mrs. E. P., æt. 32. The introitus vaginæ was surrounded by a white strip, 1 to 2 cm. wide, which had a tough consistence. The large and small lips were completely blended together; the clitoris almost disappeared. There was an ulcer about as large as a dime on the upper part of the right labium majus, projecting somewhat above the surface, of reddish color, granular, very sensitive to touch. On the lower part of the left labium majus there were also small ulcerated spots; moderate discharge. Treated without success for three weeks by cauterization with nitrate of silver and chromic acid; cocaine injections and cocaine ointment also proved ineffectual, and operation, as in the other cases, was resorted to. Patient discharged after three weeks; wound well united; symptoms entirely removed. Patient free from pain one year afterward.

CASE V.—Mrs. S., æt. 66, suffered from violent burning and itching in the vagina, especially on micturition. The

vulva was very much shrivelled; the labia minora were entirely wanting; there were white plaques upon the shrivelled labia majora; clitoris shrivelled; vagina and genitals in a state of senile atrophy. Operation, followed by granulation.

Microscopical examination of the removed tissue disclosed that it was composed partly of atrophic, partly hypertrophied substances. The tissue of the corium had entirely lost its billowy arrangement; it was tense, strongly sclerosed; at the border zone where the sound skin began the tissue was in a hyperplastic state; the stratum corneum of the epidermis was greatly thickened; the papillæ below were spread out widely, more or less infiltrated with small cells, the corium likewise. No changes in the nerve endings could be made out. None of the patients were the subjects of chronic skin diseases; no heredity. In contradistinction to all previously reported cases, these five patients came for treatment because of the suffering from the kraurosis; in the former the condition was accidentally discovered in pregnant women. L. R.

25. HEYDER, C.: CONTRIBUTION TO THE SURGERY OF THE FEMALE URINARY ORGANS (*Arch. f. Gyn.*, xxxviii., 2).—Mrs. W., æt. 37, had had six children with normal labors. Last confinement in February, 1888. She noted that the abdomen did not retract so fully after the last labor as it did with the previous ones. Six weeks before she noted a gradual increase in the size of the abdomen, which took rapid strides during the last three weeks; pains were never present; in the last weeks obdurate constipation ensued. Patient was emaciated, with a bad color. The abdomen was uniformly enlarged, measuring 104 cm. at the umbilical level. The enlargement was due to a large growth of hard consistence and smooth surface, in which the skin was freely movable; it was very little movable, not sensitive, and filled the abdomen in all its parts; there was a laceration of the perineum of the second degree; moderate prolapse of the anterior vaginal wall, as well as the posterior, with rectocele; uterus anteflexed, very mobile; adnexa not palpable, nor could the growth be felt through the vagina. Urine normal. On July 4th, 1889, operation. Abdomen opened in median line, upon which a moderate quantity of aseptic fluid escaped; the smooth surface of the growth was covered by the movable peritoneum; a trial puncture brought away some blood. The hand introduced into the abdomen felt the borders of the tumor up to the sternum, below to the iliac crests; no adhesions; the origin of the growth was in the left side. The abdominal wound was now enlarged above and below, and the peritoneal covering of the tumor cut parallel to the muscular wound; bleeding quite free. The growth could be stripped from off its capsule by

blunt instrument throughout most of its extent, except upon the left side posteriorly, where broad connective-tissue bands existed, which had to be ligated and cut. The growth was now freed, excepting at its point of origin; a mass as thick as an arm lay here, which gave no information on palpation. The large tumor was carefully removed from its bed, upon which it was seen that the greatest part of the root of the growth consisted of the left kidney; on attempting to separate it from the main mass a small portion of the kidney remained attached to the growth. An elastic tube was placed about the attachments of the growth, as well as the mesentery and a coil of intestines, which at once controlled the copious hemorrhage; the growth was then taken entirely out of the cavity, and the kidney brought forward, its large vessels and ureter each caught and ligated, and finally the kidney was also removed. The abdomen was carefully cleansed, a glass drain introduced into the pouch of Douglas and secured in the lower angle of the wound; the lowest portion of the abdominal wound was then closed. The peritoneal sac, after the removal of redundant portions, was circularly united to the parietal peritoneum, after which the upper part of the abdominal wound was closed; an opening about the width of three fingers was left in the wound in order to plug the sewed sac with iodoform gauze and to treat it openly. A narrow strip of iodoform gauze was introduced in the glass tube, iodoform powder being used only for the lines of sutures; sublimate gauze and cotton were placed in liberal quantities above the wound, and fastened by plaster. Neither iodoform nor sublimate came in contact with the absorbing portions of the wound, as it is especially important to avoid antiseptics in operations about the kidney. The day following the operation the dressings had to be changed, as they were saturated; on re-dressing on the fourth day the glass drain was removed, and the gauze in the upper angle of the wound replaced by fresh material. On the seventh day the third dressing was made and the gauze in the wound removed, and a single strip introduced to half the depth of wound. By the end of the fourth week the entire wound was closed excepting a small sinus, and the woman was discharged on the thirty-third day; two months afterward she presented herself greatly improved in health; six months afterward the abdominal cicatrix was firm. The removed tumor weighed 15 pounds; it was elastic, and on cross-section presented a uniformly compact form. The kidney showed no tissue changes. On microscopical examination at the parts where the growth was adherent to the kidney, it was apparent that its origin was from the capsule of that organ. The tissue of the tumor consisted of connective-tissue cells in

close aggregation: here and there were irregularly placed spindle cells.

The diagnosis of this growth is in all cases difficult, from its similarity to ovarian tumors. It is important for the operation as well as for differential diagnosis to exclude a malignant character of the growth. The operation once begun, it is necessary to complete the very bloody procedure as rapidly as possible. It is better to remove the kidney along with the growth. The other kidney should first be sought for and investigated.

The second case narrated by the author was one of urethrocele. Mrs. P., æt. 31, admitted on June 19th, 1889, had been delivered of her fifth child nine months previously, without instruments. For the past six months she had suffered pains in the urethra, especially when in the upright position, to which tenesmus was soon added. On separating the labia a growth about the size of a pigeon's egg, covered with smooth mucous membrane, protruded, apparently originating in the collapsed anterior vaginal wall. The finger in the vagina, however, could feel that the tumor was much larger and included almost the entire anterior wall of the vagina as far as the vault. The meatus urinarius was turned sharply upward; the uterus anteflexed, small; os uteri bilaterally torn; endometritis cervicis. On a second examination it appeared that the tumor had become smaller. The finger being pushed with greater pressure against it, urine suddenly spurted from the urethra, with some blood, the tumor diminishing still more in size. The finger then came upon a sharply bordered opening in the urethra, about 1 cm. in diameter. A catheter could pass through this opening into the sac. Operation: A metal catheter was introduced into the bladder, and an oval piece of vaginal mucous membrane was cut out so that the denudation included more area than that occupied by the sac. The piece was 10 cm. long by 5 cm. wide. The wound was closed with deep and superficial silk sutures. The new septum urethro-vaginale was thoroughly solid. Strips of iodoform gauze were pushed into the vagina on the completion of the operation. The urine was drawn off by a catheter twice daily during the first days. On the fifth day micturition took place through the normal channel. Good union, the patient being discharged on the seventh day. When seen the following December she was entirely well.

L. R.

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ORIGINAL COMMUNICATIONS.

A NEW METHOD OF SUTURE IN PERINEORRHAPHY.¹

BY

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(With four woodcuts.)

THE operation of perineorrhaphy, resolved into its essential elements, consists of: 1st, the denudation; 2d, the suture.

Gynecologists seem at present to be as far as ever, if not further, from consensus as to what constitutes the best methods of both. Innumerable modifications have been proposed from time to time, many of them too fanciful and complicated to be readily practised—I had almost said understood—even by those who perform the operation frequently. The general practitioner, who operates but now and then, is completely bewildered and mystified. He may have operated but once after a certain method, when he reads of another procedure, practised and highly spoken of by some eminent gynecologist.

¹ Read before the Gynecological Section of the Tenth International Medical Congress.

Not quite satisfied, perhaps, with the result in his last case, he forthwith alters his technique in the next: this repeats itself again and again, with the result that he fails to attain proficiency with any particular method. He is a Jack of all techniques, but master of none.

In regard to the method of denudation, the flap-splitting principle appears to be steadily gaining in favor, and seems to have the fairest prospects of something like universal acceptance. I myself have settled into the method of flap-splitting for complete lacerations through the sphincter and for incomplete lacerations without rectocele. When the last-named condition coexists with an incomplete laceration, I resort either to simple flap-splitting or to the following method: The incision is made as in flap-splitting, but is carried deeper and along close beneath the vaginal mucous membrane until the summit of the rectocele is reached. I then cut away the vaginal flap in such a way as to leave a denudation identical in shape with that produced in the ordinary flap-splitting incision when the flaps are pulled apart. In either case we have an elliptical, **U**-shaped denudation to deal with and to unite. The method of suture presently to be described does away with the rectocele at the same time that it closes the perineal wound, without the necessity of any special modification.

This method of perineal suture is a development or evolution resulting from the previous fairly extensive employment of other methods and observation of their shortcomings and defects. Previous to a description, therefore, of the method, I may be permitted to state briefly my criticisms upon, and objections to, the methods in common use.

The ideal suture must fulfil the following conditions:

1. It must appose the raw surface of one half of the wound accurately to that of the other half in all its parts, edges as well as the deeper tissues.

2. In thus apposing them, it must spread out the raw surfaces to their fullest extent, so as to secure a broad and, by virtue of its breadth, strong area of union.

3. It must be able to maintain a hold upon the tissues of either side, beyond the wound, sufficient to assure retention of the raw surfaces in coaptation until firm union has taken place.

The buried catgut suture, properly applied, fulfils the first and second indications, but fails to meet the third. While partial to, and successful in, its employment in other plastic operations where such strong tension of the tissues does not come into play—as in anterior colporrhaphy, and in posterior colporrhaphy without perineorrhaphy—I discarded it in perineorrhaphy after a number of trials. The perineum, it is true, at the conclusion of the operation looks shapely and feels solid and firm, but one of two results is likely soon to happen. If the catgut has taken but a superficial hold upon the raw surfaces of either half of the wound, it is unable to withstand, without cutting, the strong tension of the deeper perineal structures. These are liable to tear away from it before firm union has occurred; whereas the tension of the skin not being so great, the latter generally heals satisfactorily. This gives us, with good union of the skin, an attenuated and yielding perineal body or shelf—a so-called “skin perineum.”

Or, in attempting to secure a deeper and firmer hold with the catgut, we are liable to draw it too tightly, to strangle the embraced tissues to a greater or less degree, and thus to interfere with good and firm union. At all events, in spite of considerable and varied experience in the employment of the buried catgut suture, in using it for perineorrhaphy I have failed to obtain the solid perinea which alone constitute a success.

Tait's method of suture, the buried silkworm-gut loop, meets the first indication fully—though often only with the added aid of superficial sutures—the second partially, and frequently fails to a greater or less extent in the third.

I have given it a trial in a sufficient number of cases to satisfy myself on these points. The experiences of other operators are to the same effect, especially in relation to the third indication, which they have endeavored to meet by carrying the sutures through the skin, very near to the edge of the wound, instead of entering on the raw surfaces just within the wound margin as practised by Tait.

In doing this they really perform the ordinary method of suture, which consists in entering and emerging upon the skin and vaginal mucous membrane. The increased security of the hold upon the tissues thus meets more fully the third

indication. It sacrifices, however, to a greater extent the advantages of the first and second requirements, inasmuch as in tying the suture the skin is likely to be more or less infolded.

These three varieties—the buried catgut suture in tiers, the buried single loop of silkworm gut or other material, and the ordinary suture as generally applied to all cutaneous wounds—constitute our resources for securing apposition of the freshened surfaces in the performance of perineorrhaphy.

I will now endeavor to describe my method of performing perineorrhaphy—denudation and suture—and, in regard to the latter, attempt to point out why, in my opinion, it fulfils more fully the conditions, above indicated, of an ideal suture for closing the perineum.

Let us take a case of ordinary incomplete perineal laceration

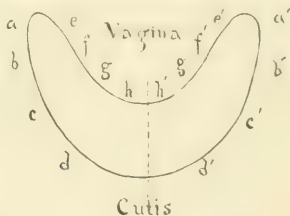


FIG. 1.

without rectocele. With sharp-pointed scissors curved on the flat, a U-shaped incision is made along the muco-cutaneous junction of the posterior commissure, the arms being extended forward to the posterior border of, or into the labia majora as far as considered desirable. The incision is deepened at its central part to half an inch *or more*, the depth gradually diminishing towards either extremity.

By drawing the anterior flap forward and the posterior backward, a raw surface is formed of the shape delineated in Fig. 1. Let us now imagine this raw surface divided into two equal halves by an imaginary line running through its centre from symphysis pubis to anus. In suturing we oppose these two halves to each other, so that the points marked by corresponding letters, *a a'*, *b b'*, *c c'*, *d d'*, come together, and the wound is folded, as it were, raw surface inward, over the imaginary line.

Four sutures are generally required, the first suture uniting the apices of the wound, ae and $a'e'$, the second b,f to b',f' , the third c,g to c',g' , the fourth d,h to d',h' . The sutures run parallel and are similar to each other, and a description of one will apply to all.

Each suture is passed as follows: A strong strand of silk-worm gut is threaded upon a curved needle (I prefer a Hagedorn) of semicircular shape. The needle, securely held by a needle holder, penetrates the skin (1, Fig. 2) to the left of the wound, $\frac{3}{4}$ to 1 inch from the margin of the latter. It is carried in a semicircular sweep through all the intervening tissues into the vagina, where it emerges at a point (2) $\frac{3}{4}$ to 1 inch from the margin of the wound. It is carried on in the

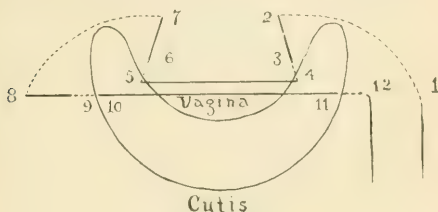


FIG. 2.

vagina, and again pierces the walls of the latter at a point (3) distant $\frac{1}{4}$ inch from the wound margin. It travels along beneath the mucous membrane, and emerges on the wound surface at 4, just beneath the edge of the mucous membrane. The needle is now carried across the vulvar orifice, and enters the wound of the right side beneath the cut edge of the mucous membrane at a point (5) corresponding to 4 of the left side. It emerges upon the vaginal wall $\frac{1}{4}$ inch from the wound margin, re-enters the vaginal wall at 7, $\frac{1}{2}$ to $\frac{3}{4}$ inch further on, again sweeps through all the tissues between vagina and skin, emerging upon the perineum $\frac{3}{4}$ to 1 inch from the margin of the cutaneous wound (8). After the four sutures have been passed thus far, the ends pendent at 8 are rethreaded upon a short, straight needle, carried through the skin at 9, $\frac{1}{4}$ inch distant from the wound margin, thence along just beneath the skin, emerging upon the

wound at 10, just within the skin, re-entering the opposite surface at 11 and emerging upon the skin at 12.

After freeing the wound of clots and after a final thorough irrigation of the parts, the sutures are tied in succession, beginning with the lowest and proceeding upward. The two free ends at 1 and 12 are drawn upon until the embraced parts of the wound are snugly approximated. They are then securely tied.

Fig. 3 represents a section through the plane, or along the course of a tied suture. It illustrates the hold of the suture upon the skin and vaginal mucous membrane, which prevents its cutting out readily, and its grasp upon the deep tissues of

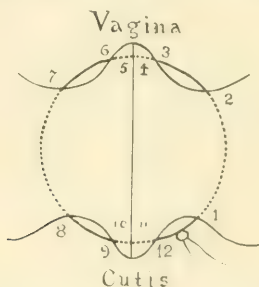


FIG. 3.

the perineum, drawing them toward the central line. It also demonstrates the manner in which the sutures spread out the raw surfaces to be united, puckering the vaginal mucous membrane inward between 3 and 6, and the cutaneous lips outward between 9 and 12, and nicely coaptating the margins of the wound all around.

A closer inspection of Fig. 3 shows that the suture is practically the equivalent of the buried loop of silkworm gut, with this exception: that for the purpose of securing a hold upon tissues which, on account of their greater firmness, are not so easily cut through, the vagina between 2 and 3, 6 and 7, and the skin between 8 and 9, 12 and 1, are included in the grasp of the suture.

When all the sutures have been tied, the perineum presents

the appearance sketched in Fig. 4. This appearance is duplicated on the vaginal surface. The sutures cross the line of union subcutaneously and submucously. The lips of the wound are puckered in the form of a median raphe, which is preserved more or less after removal of the sutures. The knots are tied off to one side of the wound.

The perineum is covered with bichloride gauze, 1 : 2,000, and the patient put to bed. For the first two days the urine is drawn by the catheter; subsequently it is voided on the bedpan, an intravaginal antiseptic douche following and cleansing the parts. The sutures are removed on the ninth or tenth day.



FIG. 4.

Since December, 1889, I have operated after the above method in 10 cases of incomplete laceration, three of them being complicated with well-marked rectocele. In 9 of the 10 cases, one or more of the following operations were performed at the same time: Amputation of the cervix, trachelorrhaphy, anterior colporrhaphy, Alexander's operation. In all of them primary union was obtained, with good perineal bodies, although in two cases stitch abscesses formed. These were evacuated by incisions made laterally quite away from, and not interfering with, the central line of union. Union in these cases was firm, and the result a good and strong though not so sightly a perineum as in the other cases.

I have thus far not had an opportunity to apply the method to a complete laceration into the rectum. When such a case

presents, I shall split the septum and stitch together the free margins of the rectal flap with catgut. With this as a base I shall build up a perineum as far forward as may be desirable, proceeding in the same way as for incomplete laceration.

The advantages of the perineal suture above described, briefly recapitulated, are as follows :

It brings together the corresponding parts of each lateral half of the perineum which have been separated by the laceration.

It does not infold the margins of the cutaneous or vaginal wounds.

It spreads out to their fullest extent the raw surfaces to be united, thus securing the broadest possible area of union, and consequent strength and bulk of the new perineum.

It secures a reliable grasp upon the tissues and obviates the tendency of the sutures to cut out before firm union has taken place.

The suture, although apparently complicated and difficult to describe, becomes practically easy of application when the principle involved is thoroughly understood. It has yielded me results better by far than I have been able to obtain with other methods.

CEPHALIC VERSION PREVIOUS TO LABOR FOR BREECH PRESENTATIONS; ALSO, SUGGESTION FOR THE TREATMENT OF OCCIPITO-POSTERIOR POSITIONS.¹

BY

G. R. SOUTHWICK, M.D.,

Boston.

(With six woodcuts.)

THE difficulties attending the management of breech positions are familiar to all physicians having an extensive experience. No matter with what patience the accoucheur may have waited, or the skill he has employed in operating, many of the infants die during labor or soon after it. The infant

¹The drawings were kindly prepared by Dr. M. W. Turner.

mortality rate varies much in the estimates of different writers. Hecker places it at 13.6 per cent, Winckel at 20 per cent, and Charles Bell at 22 per cent. These statistics are much lower than those from the Baden Maternity, which are interesting as they allow a comparison with forceps operations, and also give the corresponding maternal mortality:

In 1883, forceps.	Mortality: mothers,	1.97% ;	infants, 12.76%.
" " breech extractions.	" "	2.49% ;	" 35.02%.
" 1884, forceps.	" "	1.05% ;	" 10.8%.
" " breech extractions.	" "	1.07% ;	" 23.05%.
" 1885, forceps.	" "	1.04% ;	" 9.08%.
" " breech extractions.	" "	1.02% ;	" 25.00%.

No cases of extraction following podalic version are included in these statistics. The increased mortality for both mother and child in breech extractions, as compared with the application of the forceps to cranial presentations, is too apparent for further comment, as well as the increased danger of pelvic positions beyond those of the vertex. Another feature worthy of careful consideration is that more than one child in four dies and more than one mother in a hundred loses her life in breech presentations; also, nearly three times as many children are lost in extracting the breech as are lost in applying the forceps.

If these are the facts in large maternity hospitals in charge of expert specialists, how many more mothers and children will die in the care of the general practitioner who does not even have the help of a trained nurse!

Statistics are necessarily calculated on a mass of cases comprising extremes in practice which are generally susceptible of differential diagnosis, *i.e.*, one class in which the prognosis is very favorable, and another in which it is unfavorable. In other words, we will find one class in which the rate of mortality will far exceed the statistics quoted. In the opposite extreme there would be so little mortality that any interference with nature would be quite unnecessary. There is a small proportion of cases, occupying middle ground between these extremes, which may be considered debatable, but the writer hopes to point out clearly how these cases can be separated. It is evident that the class of cases where the active interference of art in natural processes is unnecessary, does not

require consideration here, but rather the difficult cases, which are so liable to prove of a serious character, and dangerous to the mother from traumatism in the efforts to deliver her. This implies the introduction of the operator's hand within the vagina and uterus, as in bringing down the arms, which materially increases the liability of septic infection, together with the numerous tears and abrasions which so commonly attend such a procedure.

The danger to the child is chiefly that of suffocation before it can be delivered, as the result of compression of the cord. Nine minutes is the maximum time in which the child must be delivered to save its life after compression of the cord has commenced. Unless the infant be very vigorous it will not survive even these few minutes, and weak babies will perish much sooner. Vigorous efforts to extract the child may alone destroy its life. The larger the child or the more rigid the soft parts, the longer and more difficult will be the extraction, with corresponding increased risk to the infant. This is an important factor in estimating the prognosis for the child's life.

Statistics, as has been already mentioned, indicate an average of all cases. If the child exceeds the average weight—which can be fairly estimated at seven pounds—if the cervix uteri be thick and comparatively firm, and the perineum rather large and solid, the prognosis must be more unfavorable than the statistics just given would indicate, especially if the pelvis is only of normal size and the patient is a primipara. If, on the contrary, the child is likely to weigh less than seven pounds, and the mother is a primipara, possessing a capacious, roomy pelvis, and the cervix and perineum are soft and easily dilatable, then the prognosis is extremely favorable and labor may be terminated in a natural manner.

In connection with this, it should be remembered that in minor degrees of pelvic contraction it is sometimes possible to deliver a living child in a breech presentation which could not be done if the head presented, owing to the peculiar conformation of the cranium.

These are well-known facts, which may also serve as indications for adopting any plan of treatment which promises better results. It will be observed that the chief factors in

forming a diagnosis can all be ascertained with considerable accuracy before labor begins, when the child is freely movable. After the uterine contractions of labor have once commenced, the child is grasped by them so firmly that it is not easily moved. This implies that a successful and easy version from a breech presentation should be performed previous to labor, and demands a good knowledge of the diagnosis of the position and size of the child by abdominal palpation.

It is remarkable how much information can be obtained by a careful examination of the abdomen. As a rule, with few exceptions, I find it more accurate and valuable at the com-

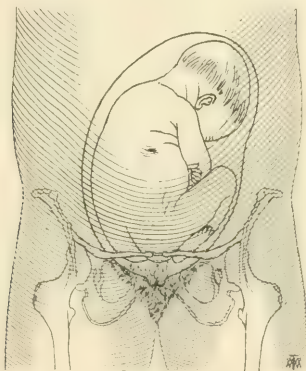


FIG. 1.—Second position of the breech, which is a little below the brim of the pelvis.

mencement of labor than the vaginal examination, so far as the child is concerned.

On account of my own experience, and from careful observation of the experience of others, I have sought for a remedy for cases likely to be difficult, and believe I have found it in version by abdominal and *vaginal* manipulation about two weeks previous to labor, though I have performed it successfully five weeks before labor. I have found the operation, as I perform it, to be very easy, requiring from five to ten minutes. It is painless, and I manage to talk with the patient, so that she is scarcely aware of what is being done. Indeed, she

would not observe more than that she was being examined with some manipulation.

The preparations are identical with those for external version, a method which I have used with some success if the patient was not corpulent. I have found that the presenting part is apt to catch on the side of the pelvis (Fig. 1), requiring considerable effort to dislodge it, which was not always successful.

In order to meet this difficulty the writer now operates in the following manner, and will say here that while he is not



FIG. 2.—Breech raised above the brim of the pelvis. Position of the external and internal hands in pressing the breech to one side of the pelvis.

aware that any other physician operates in this way, or that there is a published account of it, no doubt there are many obstetricians perfectly familiar with the details.

I first direct the patient to lie on her back in bed, undressed, in order to relax the abdominal muscles, with the knees drawn close up to the body and the shoulders and head well raised on pillows. I then thoroughly disinfect my hands and introduce the first and second fingers into the vagina, taking care not to enter the cervical canal. My first step is to gently press up the breech through the walls of the cervix, so as to raise the breech

up just above the pelvic brim, and, if practicable, toward one side of the brim, corresponding to the back of the child (Fig. 2). Holding the breech in this position with the internal hand, I apply the fingers externally to one side of the breech and easily coax it to one side of the abdomen, corresponding with the back of the child, so that it will be in the position in Fig. 4, hands excepted. The head will move down correspondingly on the other side, and the external hand can now coax it with a little sliding pressure into the brim of the pelvis and by occasionally pushing up the breech

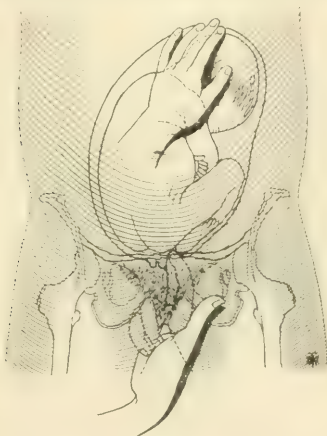


FIG. 3.—Position of the hands in performing vagino-abdominal version after the breech has been raised and pressed to one side of the pelvis.

(Fig. 3). Should the head stick a little after the breech is pressed well to one side of the pelvis, the left hand must keep its position and hold the breech to one side, as it always tends to slip back, and the right hand is taken from the vagina and applied to the head of the child, as in Fig. 4. By pressing gently up on the breech and down on the head, version is easily and painlessly accomplished. All manipulation is to be avoided during uterine contractions, which are recognized by feeling the uterine muscle harden at intervals. The patient must relax her muscles as much as possible, and nothing

is better to do this than to make her talk. It is easier to manipulate through thin abdominal walls than if they are very fat.

There is another way of performing this simple operation, which appears better theoretically ; but I have not employed it for this particular form of version, as it is more trying to the patient than the former method, which is so simple.

The principle is the same, only the patient is placed on that side corresponding to the child's feet. The operator stands behind her, introduces the hand nearest the genitals, presses up the breech through the cervix as before, and the head by



FIG. 4.—Method of performing external version after displacement of the breech, if that shown in Fig. 3 proves insufficient.

force of gravity drops down as the breech goes up, till the child is nearly in a transverse position, when the head is pressed down as before.

The question naturally arises : Will the infant remain in its new position, and, in view of the child moving about and naturally changing its position in the uterus, when would be the best time to perform version ?

In regard to the first question, I have kept the child in position by a couple of small folded towels on each side of the lower part of the uterus, which are secured by a moderately firm binder. In from twenty-four to forty-eight hours the

uterus and child accommodate themselves to each other and the binder is unnecessary.

The child often changes its position in pregnancy, but in the last month it is rare for any pronounced change to take place, such as the substitution of a vertex for a breech presentation or *vice versa*. I am of the opinion that about two weeks before the probable date of delivery is the best time to perform version. With the careful manipulation as described above it is difficult to imagine how any harm could follow. It would be possible for a careless operator to allow his finger to slip

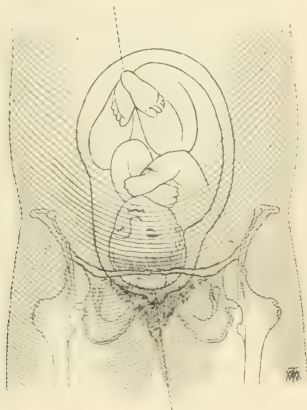


FIG. 5.

into the cervical canal and rupture the membranes. This would cause labor, which ought to be perfectly natural, though possibly more prolonged than if a fortnight later at full term.

The head brought down to the brim simply substitutes a much more favorable presentation than that of the breech, and as such is subject to the same principles as if it were the primary position. After the first day the patient is up and around just the same as before, and will be confined at the usual term of pregnancy. In one case where I had turned a nine-pound baby, I found the head was in the fourth position of the vertex.

As occipito-posterior positions when the head is large are often troublesome, I tried to devise some plan in the hope of turning the occiput anterior without interfering with pregnancy or labor.

In this left occipito position the child is kicking on the right anterior abdominal wall, which is tense, comparatively firm and unyielding in comparison to that portion of the uterine walls in contact with the soft and yielding intestines.

Every time the child kicks vigorously the tendency is to straighten out a little and push the back of the child against the opposite, or left posterior, or lateral uterine wall. This motion of the child is less marked when it kicks towards the intestines. In other words, the head and knees of the infant may be considered as relatively fixed points, and a line drawn through them will represent an approximate axis on which the child may turn (see Fig. 5)—*i.e.*, the head and knees or feet might be considered the hinges on which the body may swing forward. The direct consequence of kicking under the above conditions must be that the back of the child is kept more in motion by the feet kicking anteriorly than posteriorly, and by placing the patient on the side corresponding to the back of the child, the motion of its body will favor the action of gravity and promote the dropping downward and forward of the body along the lateral inclined plane of the uterine cavity (Fig. 6); and, corresponding with the forward rotation of the body, the feet will kick more posteriorly and will be more likely to remain there, as the space is greater, thus preventing the return of the back to its former position; furthermore, the kicking of the child in its new position is not likely to dislodge it on account of the gain in space. Thus much accomplished, when the patient stands erect the body of the child is pitched still further forward on the smooth lateral and anterior inclined plane of the uterine cavity, and (Fig. 6) slipping down over it becomes wedged in its new position, and the conversion of a posterior position of the vertex into an anterior is accomplished.

These are the reasons why an attempt was made to change a fourth cranial position into a first one. My patient was directed to lie always on her left side when lying down. On examining her again about four or five days later, I was much

gratified to find that the desired change had taken place, and that the infant was as unmistakably in the first cranial position as it had been previously in the fourth. It kept that position, and was delivered so a fortnight later after an easy labor. This may have been chance. It will take the experience of many cases to affirm its efficacy. It certainly would be utterly useless to try the plan if labor had begun; but the method of having the patient lie on the side corresponding with the baby's back has the great merit of doing no harm, and if it

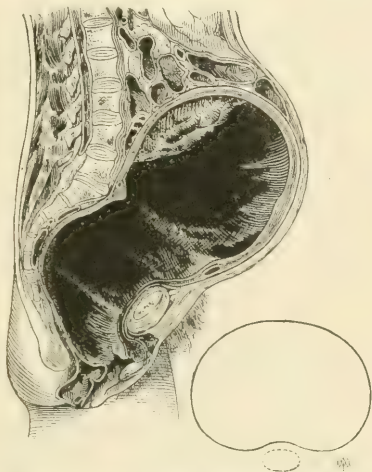


FIG. 6.—Frozen section of uterus at close of first stage of labor, showing inclined planes of the uterine cavity over which the body of the child would fall or swing and glide down. The oval is a diagram of a transverse section of the uterus, to show the relations of its diameters.

proves reliable will be of immense advantage in occipito-posterior cases.

In conclusion the following suggestions are offered as a résumé of this paper :

1. The careful examination of all patients, so far as possible, a fortnight before the probable date of delivery.
2. If the child presents by the breech and is small, the mother a multipara, her pelvis large and the soft parts much

relaxed and yielding, the prognosis is very favorable for both mother and child, and the case can be left to nature aided by skilful attention during labor.

3. If the child is likely to weigh seven or more pounds, if the mother is a primipara, or if the pelvis be no more than the ordinary size, and the soft parts are somewhat firm and do not have that doughy softness indicating easy and rapid dilatation of them, then I would recommend cephalic version previous to labor.

4. A contracted pelvis contra-indicates version from a breech position to one of the vertex.

5. Is it not advisable to attempt the conversion of occipito-posterior positions to anterior ones by posturing the patient previous to labor?

THE AGE OF PUBERTY OF INDIAN GIRLS.

BY

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THE age of puberty among Indians it is not easy to learn, since it is the custom in most tribes for the girls to marry before the menses appear.

A curious result of this custom came under my observation while in medical charge of a tribe in the Northwest. Since the girl menstruates after marriage and its attendant pleasures, the idea prevails in the tribes that the menstrual flow is the result of sexual intercourse. In two instances Indian men came to me with the complaint that their daughters, in the boarding school at the Agency, had been seduced, as *their menses had appeared!* Girls in the camp will conceal and deny the flow if it occurs before they have been sold in marriage.

The early marriage and consequent sexual excitement, with the entire absence of modesty in Indian thought and conversation, would tend to cause precocious menstruation, and the facts I have been able to obtain establish this impression.

Even in the girls who are in school till after puberty it occurs earlier than among white girls in the same latitude.

In St. Xavier Mission School, on the Crow Reservation, Montana, containing forty Indian girls, the mother-superior informs me that there are none above 12 years of age who do not menstruate.

The St. Ignatius Mission School, Flathead Reservation, Montana, contains three to four hundred Indian children, received into the school so young that the ages of the girls can be learned with considerable accuracy. The sister-superior of that institution writes me that "in general the Indian girls begin to menstruate younger than the white girls, and those who at the age of 14 have not yet their menses generally die of consumption."

My most accurate observations, however, were made at an Agency school which was under my personal supervision. Concerning ten girls in it I am able to fix positively the ages at which the menses first appeared. These girls were received into the school when quite young, and the record of their ages made at the time is almost certainly correct. Three are half-breeds, seven full-blood Crow Indians. They menstruated as follows: One at $14\frac{1}{2}$ years, one at 14 years, two at 13 years, three at 12 years, two at 11 years, one at $10\frac{2}{3}$ years. The two at 13 and one at 12 are not yet quite regular. The one at $10\frac{2}{3}$ has menstruated four times at proper intervals.

From so few cases it is of course impossible to make reliable deductions. The average for these ten girls is 12.91 years, while, according to the only American statistics (Emmet's), in the white race the average is 14.23 years. This early average agrees with my own opinion, drawn from other sources and expressed above. It is also in accord with the opinion of such physicians in charge of Indians as have favored me with their views.

The duration of menstruation in the case of the above school girls was usually two days, rarely exceeding three. They have been remarkably free from pain or other unpleasant symptoms on the establishment of the function or at its recurrences.

CASES IN PRACTICE.¹

BY

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PHLEGMONOUS ERYSIPELAS DURING PREGNANCY.

JULY 12th, 1889. Mrs. F., white, age 19, six months advanced in her second pregnancy, consulted me for an affection of the right knee. Two weeks previous she had fallen down some steps and her foot had been caught between the rails, whereby the knee received a severe wrenching. She was picked up and carried to her bed, but was able to be up and about in a few days. At the time of my visit she was suffering severe pain in the knee, which was swollen and red, and very tender on pressure. The case was considered to be one of acute synovitis, for which no other cause could be assigned than the fall above referred to. There was some febrile reaction and headache. A saline cathartic was ordered, and lead and opium lotion applied to the knee. The next day the pain was so severe as to require repeated doses of morphia for its relief.

July 18th.—Pain and general condition better. No fever. Swelling continued. A small blister was applied to each side of the knee, and next day the patient was very comfortable.

July 20th.—Erysipelas appeared on the thigh just above the knee. She was ordered tincture of iron, fifteen drops every three hours; chloral. to secure sleep at night; and zinc and carbolic cerate to be applied to the part affected.

July 22d.—Erysipelas had extended over the right side of the abdomen as high as the umbilicus. Temperature 103°; pulse 120. Continue treatment and give stimulants freely.

July 26th.—Disease subsiding. Fluctuation on inside of

¹ Read before the Washington Obstetrical and Gynecological Society, January 17th, 1890.

knee. Abscess opened and gave vent to three ounces of pus. Washed cavity with carbolic solution.

July 27th.—Fluctuation observed on the outside of the knee, and the antiseptic solution injected into the opening made on the inside passed behind the joint to unite with the abscess on the outside. This was made to pass out through the incision already made, although it was evident that another opening would have to be made to insure proper drainage, but I had to defer this until the next day. Before leaving the patient, however, all the contents of the abscess cavities were removed as far as possible, but on the 28th, when the patient was visited, an immense abscess was found to exist, the contents of which had been formed since the preceding day. Dr. H. M. Smith administered the ether, and an incision gave vent to a pint and a half of thick pus. Examination showed that the abscess cavity extended as far as the trochanter, and to secure proper drainage I made a long and deep incision near that part, which permitted the escape of a considerable quantity of pus which had burrowed between the muscles. The parts were thoroughly washed, and a drainage tube extending from the knee to the trochanter was introduced. Iodoform was applied to the incisions and the limb bandaged. The formation of pus rapidly diminished in quantity, so that in a few days the tube was removed, and on August 4th the lady was able to be out of bed. By August 6th the discharge was so slight that only an external bathing, for purposes of cleanliness, was occasionally required. Of course there was some pain on trying to walk for a time, but it was never severe enough to require an anodyne for its relief.

August 24th.—The patient was confined at seven and a half months. The child, a boy, was living, and the lying-in was uneventful.

Erysipelas complicating pregnancy is not frequently met with. Charpentier has seen but one case. The remarks of the author mentioned are so concise that only a few words are necessary to express what he has to say. He writes ("Cyclopedia of Obstetrics and Gynecology," vol. ii., page 11): "If pregnancy does not seem to influence the course of the affection, the case is not the same as regards the influence of erysipelas upon pregnancy. The latter is often interrupted,

either by abortion or by premature delivery, and the fetus may be directly affected by the rise of temperature in the mother. The mother, as in cases of smallpox, may die or be cured; everything depends on the severity of the disease. However, erysipelas seems to be less serious than variola, and may be placed on the same level as measles."

My purpose has not been to discuss the subject of erysipelas in general, nor to give in lengthy detail the symptoms and treatment of the case recorded. It will suffice to say, in addition to the history given, that the temperature did not rise above 103° , but it remained for some days at that point while the disease was advancing, and again during the formation of the abscesses. Stimulants and milk, broths, etc., sustained the patient through the disease.

The points of interest in the case may be summarized as follows: The extent of surface involved by the disease—from the knee to the umbilicus; the rapidity with which pus was formed, as recorded above; and the extensive burrowing of the great quantity of matter, which demanded large incisions and long drainage tubes to effect its prompt and efficient removal. Notwithstanding all this, premature delivery did not occur until nearly three weeks after the lady may be said to have entirely recovered from the disease, and the period which elapsed between the subsidence of the disease and the onset of labor would seem to justify the inference that the erysipelas had nothing to do with terminating the pregnancy.

RETRO-UTERINE HEMATOCELE.

The following is the only case of hematocele which has occurred in my practice, and possesses sufficient interest, in my judgment, to justify me in placing it on record.

The patient, Mrs. B., gives the following history: She is 39 years of age; widow; has given birth to two children, the last seven years ago. Three years ago she nursed her mother through a protracted and fatal illness, and the prostration incident to the loss of rest, and mental and physical strain, was supposed to be the cause of a severe attack of peritonitis, from which she slowly recovered. Ever since her convalescence from the peritonitis Mrs. B. has suffered more or less from uterine trouble, variously diagnosticated. She came under my

care in May, 1889, and I found that she had slight prolapsus, which I believed to be due to her work, which kept her standing many hours daily feeding a press in one of the departments. The occasional introduction of cotton saturated with glycerin and tannin afforded great relief. I was summoned to see her September 12th, 1889, and learned that on the preceding Saturday night her menses appeared at the usual time. Having occasion to get out of bed about 3 o'clock Sunday morning (September 8th), she was suddenly seized with violent pain in the lower part of the abdomen, and was barely able to get back to her bed. The pain was followed by symptoms of syncope, and she soon discovered a "lump" in the hypogastric region. In the morning she was pale, but suffered no pain, and wisely kept the bed. However, she did not send for me until Thursday.

The lady was very pale at the time of my visit. In health she had a remarkably florid complexion, and her pallor was in marked contrast with her appearance when previously seen by me. On palpation there was found a uniformly boggy swelling extending across the hypogastrium and reaching a height of several inches above the pubic bones. The only break in the uniformity of this swelling was found to the right of the median line and about two inches above the horizontal ramus of the pubis. The shape and density of this body induced me to think it was the uterus even before the pelvis had been explored.

Vaginal examination demonstrated that the lateral and posterior portions of the pelvis were occupied by a mass continuous with that found on abdominal palpation. Rectal examination disclosed the fact that the effusion was behind the uterus. The uterus itself was lifted out of the pelvis, the cervix being above and behind the pubic bone and to the right of the median line. It was easily examined by the conjoined method.

The history of the case, the pallor of the countenance, the symptoms of anemia incident to loss of blood, the character of the effusion and the suddenness of its appearance, together with the displacement of the uterus, made the diagnosis of hematocele easy.

Inasmuch as the hemorrhage had ceased, the indications for

treatment were to prevent the return of the hemorrhage, promote absorption of the effused blood, and to sustain the patient. Rest in bed, avoidance of sudden movements, the use of the bedpan, examinations only at long intervals, a diet easy of digestion, and the internal administration of iodide of potassium, seemed to meet the demands of the case. After some days the bowels were moved by gentle laxatives. Tincture of iodine was applied over the abdomen. At first there were feelings of undue distention, some pressure on the rectum and bladder, and a tendency to syncope on raising the head : but these gradually subsided as the effusion was absorbed. An occasional morphia suppository was, however, required.

An excellent index of the progress of absorption was found to be the uterus, which gradually receded to its normal position in the pelvis, its descent being easily demonstrated by palpating the body of the organ above the symphysis until it had passed below the pelvic brim. Before the middle of October the entire effusion had been absorbed and the patient was able to leave her bed. While there are no pelvic remains of the affection present, the lady still feels the effect of the great loss of blood which she had suffered, but is able to resume work in a less exhausting situation than that formerly filled by her.

On the 25th of September Dr. Busey kindly saw this patient with me and confirmed the diagnosis.

The only explanation I am able to give of the cause which produced the hemocele in this case is that peritoneal adhesions (the result of the old peritonitis) gave way under the strain induced by the patient assuming suddenly the upright position, while the pelvic organs were already in a state of repletion incident to the menstrual period. This is the cause frequently assigned for the production of hemocele. In some cases it might be necessary to make a differential diagnosis in which extra-uterine pregnancy would be a factor ; but in this case no such course was called for. Not the least important point to be noticed is the recovery of the patient from so extensive an effusion of blood ; for in many cases the blood is not absorbed, abscess forms, and the life of the patient is endangered or sacrificed by the sepsis resulting from the presence of pus in the pelvic tissues.

The treatment of hematocele will be influenced by the location of the hemorrhage. If this be intraperitoneal, then abdominal section will be demanded. When the effusion is extraperitoneal a waiting policy may be adopted until we are assured that the hemorrhage cannot be arrested by clotting or by remedial measures; then operative treatment must be resorted to. But when the hemorrhage has ceased, the treatment indicated and pursued in the above-recorded case seems to be all that is necessary. Should abscess result, it must be treated in the same manner as abscesses occurring under other circumstances.

SEVERE VAGINAL HEMORRHAGE CAUSED BY THE NOZZLE OF A
SYRINGE.

October 1st, 1889, Mrs. B. called at my office to say that her menses ceased during the preceding week, but had returned in an aggravated form on the morning of the day she visited my office. Mrs. B. is a widow, 30 years of age. She could give no other explanation of the cause of the hemorrhage than that she may have hurt herself in the morning with the nozzle of a syringe while administering an injection for cleansing purposes. She said the syringe always gave her some pain, and that that which she had experienced at the time above mentioned did not exceed that usually felt. On making a digital examination, blood was found to be flowing freely from the upper portion of the vagina, and I saw no reason to think it did not come from the uterus, and, further, that the flow had been excited by the syringe having been forcibly brought in contact with the cervix and thus causing a metrorrhagia.

It was late in the afternoon when the visit was made, and I contented myself with introducing a good-sized piece of cotton, believing that the tampon would be all that was called for. She had scarcely assumed the upright position when she exclaimed, "Doctor, the blood is flowing worse than ever!" On investigation I found that not only was the blood soiling her garments, but it was running over my office floor. Again placing her on the table, I introduced more cotton, and, finding she was weak from the loss of blood, I accompanied her to her home. After she had disrobed she was again examined,

only to find that the cotton was scarcely any barrier to the flow of blood. Removing the cotton, the vagina was examined with negative results, and then the parts were tightly packed with absorbent cotton. I may here state, parenthetically, that on several occasions during the lifetime of this lady's husband I had occasion to treat her for uterine ailments, and usually had some difficulty in reaching the upper part of the vagina with my finger. The vagina was very deep and examinations not always satisfactory. Ergot was prescribed for internal use. This was at 7 o'clock.

I was again summoned by telephone at 10 o'clock, and half an hour later I found Mrs. B. almost moribund from hemorrhage. She was blanched, almost pulseless, surface cold, respiration sighing, sight failing, ringing in the ears, etc. In no other case, except in post-partum hemorrhage, had I ever seen such severe symptoms from loss of blood. The tampon was found to be saturated with blood, which was also pouring freely from the vaginal orifice. Hastily lowering the head, I proceeded to remove the tampon. As I extracted the last piece of cotton my finger discovered a rough surface, which was found to be an opening in the vaginal fornix about one inch behind the cervix uteri, and into which the tip of my index finger readily passed. The cause of the hemorrhage was now manifest. The nozzle of the syringe had been used with sufficient force to punch an opening through the tissues, and a vessel of sufficient magnitude had been opened, with the result of causing an almost fatal hemorrhage. Some Monsel's solution was hastily secured from a neighboring drug store, with which cotton was saturated and packed against the bleeding point, and I soon had the satisfaction of seeing that the hemorrhage had ceased. The vagina was then packed with cotton, that saturated with the iron solution being left in place, and a small quantity of stimulant was given until the warmth of the surface gave assurance that reaction had been established. The tampon was permitted to remain thirty hours, when it was removed, and, as there was no evidence of any bleeding having occurred, it was not deemed necessary to introduce another. The lady recovered without further trouble.

Not many cases of injury to the vagina are recorded in the text books, except those received during parturition. How-

ever, Dr. J. Ford Thompson reported one case to this Society (Transactions, vol. ii., p. 159) which he designated "Laceration of the Perineum in a Child Seven Years Old." The child was standing on an iron fence and fell, striking the perineum against a knob on the top of a post. The vaginal wall was torn as far as the cervix; the sphincter ani and rectum were also torn. There was only slight hemorrhage.

The interesting point in my case is that this lady should have inflicted so serious an injury as to nearly cost her her life from hemorrhage, and yet not to have experienced more than a minimum amount of discomfort. It is also strange that there should have been so little hemorrhage at the time the injury was inflicted, for it was some eight hours after the use of the syringe before the bleeding became sufficiently severe to excite apprehension in the patient and make it necessary for me to subject her to treatment.

In the *AMERICAN JOURNAL OF OBSTETRICS* for July, 1888, I reported a case of vaginal hematoma following labor. Above I have presented two other forms of hemorrhage affecting the female pelvic organs, all of which were interesting to me, and all, I am happy to observe, recovered.

1133 TWELFTH STREET, N. W.

ELECTROLYSIS OF MYOMATA.¹

BY

EPHRAIM CUTTER, M.D., LL.D.,

Corresponding Member Gynecological Society of Boston.

HAVING been asked to represent America in the consideration of this operation, I have endeavored to learn what has been done by publicly asking for information in the medical journals. I find two lines of effort described: 1. Original work antedating the French method. 2. Work following the French method.

¹ Read before the Tenth International Medical Congress, Berlin, August, 1890.

As the time is short, I will not touch upon the unoriginal work, for the subject has been so ably presented that any words from me are needless, except to say that Americans are grateful to Europe for any new ideas, and usually entertain them more cordially than ideas of their own. *I shall try to present only facts and opinions based on facts.*

The American operation is an evolution.

I.

So far as I know, the first step was the exhibition by me of a galvanic battery at a meeting of the Middlesex (Massachusetts) East District Medical Society. This was March 1st, 1871 (see Society Record). The battery acted on beefsteak so that the society saw the whitish discoloration of the steak, which microscopical examination showed afterwards to be due to the presence of multitudes of spherical bubbles of gas surrounding the muscular fibrillæ. A solution of starch and iodide of potassium in water was turned blue by the battery.

Could a forward step in medicine have been more openly taken? Was not this step clinched by positive evidence before a regularly organized branch of the Massachusetts Medical Society?

II.

Soon after this meeting, Dr. W. Symington Brown, now president of the Gynecological Society of Boston, and also a member present at said demonstration, came to me and said in substance as follows:

"Gen. Kilpatrick, U.S.A., who had an angiomatic tumor of the neck removed by electrolysis by Dr. R. P. Lincoln, of New York, lecturing at Melrose, saw Mr. Pierce, one of his soldiers, and asked him about his wife, my patient. Was told that she had a fibroid of the uterus. 'Why not have it cured by electricity?' asked the general. This led Mr. Pierce to ask me, and now I come to ask you. Think it over, and whatever you decide, Mrs. Pierce is ready to submit to."

Thus was the door opened.' I told Dr. Brown that the conditions of the general's tumor and Mrs. Pierce's were different; one was made up of blood vessels and the other of

¹ See Dr. W. Symington Brown's paper, Philadelphia Medical and Surgical Reporter, February 8th, 1873.

fibroid tissue mainly. I went with him, however, and saw the patient, confirmed the diagnosis, and then gave up my mind to the consideration of the feasibility of the operation with the means at hand.

III.

I sought the counsel of eminent specialists in medical electricity who lived in Boston, to see if this kind of operation had been done or was advisable. They unanimously said, though seen separately, it never had been done, never could be done, and gave me to understand I was a fool to think of it at all.

Such dicta only stimulated me to do it. I said to myself, If nobody has done this operation, how does *anybody* know it will do no good? So I resolved to go ahead, but with such positive means that the results would leave no doubt of being positively good or positively bad.

Of course the electricians would not help me, hence I was forced to rely on my own judgment as to the *modus operandi*. Dr. Brown and the assistants present were only too glad to aid me all they could. Here I wish to publicly thank these gentlemen for paying me so high a compliment, for without their help I doubt very much if the following history could have been written. Few know what a terrible responsibility I felt was laid on me. I did not shrink, and but tried to do my best, and this is all any one can do.

I gave my decision to Dr. Brown, and the next step of evolution was:

IV.

CASE I.—Mrs. Pierce. Present, Drs. W. Symington Brown, of Stoneham; Howland Holmes, of Lexington; S. W. Abbott, now health officer of Massachusetts; F. F. Brown, of Reading; W. F. Stevens, of Stoneham; Day, of Wakefield; the husband, and myself. Date, August 21st, 1871. For a needle the small stylet of a trocar was connected with the carbon plates and introduced into the substance of the tumor, which projected into the posterior cul-de-sac of the vagina. Over the pubis was placed a sponge, wet with water, held in a glass handle and connected with the zinc plates. The constant current was used for about ten minutes. Patient etherized. Everything passed off quietly.

Second application August 29th. Same gentlemen present, with addition of Dr. Gilman Kimball, whom I had told about the case and work. He said he welcomed any improvement in the treatment of uterine fibroids, as he saw so many of them and could do nothing but extirpate, which meant death in too many cases. I invited him to co-operate with me; he gladly did so. He made this second application at my request, and introduced the stylet needle. Whether it was because the patient expected her tumor to go off almost at once, as Gen. Kilpatrick's, or whether she was terrorized and frightened by the operation disturbing her more than she liked, I do not remember, but the outcome was that she would have no more to do with us, and afterwards died with the tumor unrelieved.

V.

Dr. Kimball, with my battery, procured the best needles he could from Dr. Lincoln in New York. These were tried in a case December 24th, 1871.¹ But the needles would not penetrate the hard fibroid. They twisted and turned in his hand and were not under control. Dr. Kimball is a decided man, and said out and out that he would have nothing to do with the operation unless I made him better needles which would surely penetrate and be controlled as to direction and depth of puncture. I was very loath to part with Dr. Kimball's help, as he had had so much experience and such great opportunities. So I studied the principles of penetrating instruments in order to find out where the trouble was.

VI.

To obviate the twisting I made an electrode twisted like a corkscrew. The screw part was plated with gold and the shank nicely insulated. In the proximal end was an eye for a cross-bar. This looked well, but did not work, and Dr. Kimball was more disgusted than ever, and said so.

Next effort resulted in the instruments shown, that never have failed save when they struck a calcareously degenerated fibroid. Dr. Kimball was satisfied and used them on his next case. These electrodes have been used by us ever since,

¹ See Boston Medical and Surgical Journal, January 29th, 1874. Dr. Kimball's article.

and we are both satisfied with them; while they work so well I do not propose to give them up, though several gentlemen have ridiculed them, until I can procure better ones. The originals were made as follows: An ordinary surgeon's director was taken, its point and edges were sharpened, an ebony handle was fitted to the flattened end, and two inches of the larger end japanned for insulation. The dimensions are as follows: Length of instrument over all, $8\frac{1}{2}$ inches; of blade, $4\frac{7}{8}$ inches; width of blade at widest part, $\frac{3}{8}$ inch. The foramen in the metallic portion of the handle is sufficiently enlarged to readily take in the ends of the conductors. The angle made by the two wings of the blade may be represented in section by the letter V. The point of the angle is made dull. The effect of this arrangement is to draw the tissues over sharp edges, represented by the free ends of the letter V, and thus cause a ready section of the tissues penetrated. It is evident also that the union of the two blades at this angle offers a great resistance to bending in any direction. It has been found that these electrodes become granular and dull by use, rendering it advisable to have them sharpened often. It has been found also that their introduction is facilitated by making punctures through the skin with a lancet.

VII.

The Battery.—Stochrer's pattern. Eight plates of carbon, 9×6 inches; eight plates of zinc, 9×6 inches.

The carbons were one-fourth of an inch and the zines one-eighth of an inch thick.

They were arranged so that the zines should come on the outside. The carbons were connected on one side, and zines on the other.

Solution.—Potassic bichromate dissolved in cold water to saturation. Add to 1 gallon of this saturated solution 8 ounces of commercial sulphuric acid.

The Conductors are connected with the battery by cam couplings or binding screws on the ends of the rods of copper. They are made of strands of *copper* wire covered with knit worsted. Those made of pure silver are more flexible and lighter. The writer has a pair of them, and prefers them to the copper except for the expense.

I wanted :

1. Constant current ; as the late Dr. Louis Elsberg said, when electricity does good twenty times, galvanism acts nineteen times and faradism once.

2. Large plates, to cause no pain. Small plates cause pain. I did not want to cause pain. Have tested this practically to my sorrow.

3. Quantity and not intensity. My battery No. 1 measures about 12 square feet of surface. My battery No. 2 measures about 2 square feet, and yet they measure the same in am-pères and volts. This has been tested repeatedly. I do not think am-pères or volts measure the chemical action correctly ; if they do, then the action of a chemical on 12 square feet of surface is the same as that on 2 feet, or the action of a gallon and a half of electropion fluid solution is the same as that of one pint of the same solution, or a whole is the same as one-sixth part.

I did not dare to put needles into the abdominal tumor and connect them with the small battery ; it was done once and the case died. There is something in the large current from large surfaces coupled so as to give quantity and not intensity, that the human system can tolerate. In a recent case where the needles were inserted in the abdomen into a tumor, the points being at least six inches apart, there was an immediate fulness and strength of the pulse, and in the presence of Drs. Robert Newman, O. S. Phelps, R. L. Watkins, J. A. Cutter, and H. T. Brooks, all of New York, the intercalated galvanometer needle was seen to vary five degrees on making and breaking the current. This is only put in because certain of the younger operators have, not with that respect that they should evince to their elders, wagered that I could not get current through one inch of tissue. This was proved on the blackboard by figures, but not on the human body ; so also was it proved that an Atlantic cable was an impossibility, that four messages could not be sent over the same wire at the same time.

Let us be modest ; we do not know all about the currents of electricity that are flowing through the human body, and when I insert my needles into a tumor, and they are connected with my battery, I expect that the current will flow

through the tough tissues of that tumor and influence the heart—in fact, the nerve centres themselves, for in them it is my belief that the therapeutical action is done. We influence the processes of nutrition so that the tumor is eventually absorbed by nature's own methods.

I have no quarrel with measurement, though I have cured cases of large abdominal fibroid before a milliampèremeter was ever invented, and though I used all the instruments of measurement known to my time, but had to finally rely on the condition of my battery, conductors, electrodes, and patient. This is no more empirical than investigating with a milliampèremeter.

I have recorded *fifty* cases in a paper published in the AMERICAN JOURNAL OF OBSTETRICS in 1887. I call attention to these cases because time is an element in the therapy: for while there may be great improvement as to pain and distention, the tumors may not decrease till a year or more has elapsed. Again, these cases were severe ones, present the worst side, and are early work.

They are, in résumé, as follows: Non-arrests, 7; deaths, 4; arrests, 25; relieved, 3; absolute cures—that is, disappearance of tumors—11. It is only just to say that the 4 deaths were as follows: First, a case that would have operation despite her condition; death from asthenic type of typhoid fever. Second, death from entirely unnecessary exposure in a cold room. Third, death from typhoid fever after third operation; did not have treatment. Fourth, in a morphine eater, after second operation.

I do not expect that this operation will be used by every one. It is a strong operation, and must be conducted by a man of experience, who knows how to judge systemic conditions; but so long as large fibroid tumors of the uterus exist, women should have the benefit of all given operations combined with judicious selection.

I close this brief history with the quotation from my paper at the Ninth Congress, Washington, 1887:

“Remember, most of the cases operated on were of fibroids, large, hard, extra-uterine and intra-uterine, packing the pelvis, filling the abdomen, occurring in cases of bad general health and complications, such as abscesses, ovarian tumors,

opium eaters, etc. The worst cases received the applications as well as the most promising."

After sixteen years' lapse of time it truly can be said "the unexpected happened": for besides *the expected arrest of development*, in a large part of the cases there have been realized:

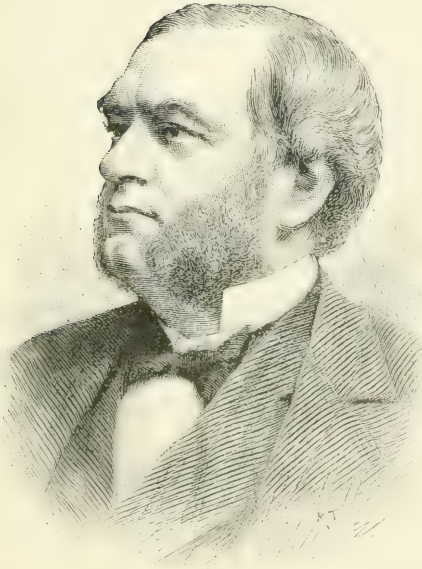
1. In some, entire cure.
2. In some, great diminution of the growths.
3. Relief from pain and hemorrhages in the large majority of cases.
4. Attention to the operation by eminent members of the medical profession.
5. Counting in all the reported cases, there must have been over four hundred cases of applications of galvanism to uterine fibroids, while the unreported cases probably increase this number by scores.
6. Another realization has been the variations from galvanism to faradism, in the mode of application, in the batteries, in the duration of applications, the number of applications, the kind of electrodes used, and the discovery of instruments to measure the current by milliampères.
7. The operation has been widely published and has become pretty well known.
8. The time seems to have come when uterine fibroids are no longer "opprobria medicorum." These results promise better things for the future when our knowledge shall be more perfect and complete.

IN MEMORIAM.

JAMES MATTHEWS DUNCAN, M.D., F.R.S., ETC.

(With Portrait.)

THIS great obstetrician died at Baden-Baden on September 1st. His fame was so widespread, his work so valuable, and his individuality so marked, that a short review of his professional career and opinions will doubtless prove of interest to our readers. His personal character, his manly bluntness harmoniously blended with wit and geniality, and other equally



Yours truly
Jonathan Druea

admirable qualities, earned for him profound love and esteem amongst his relatives and pupils. His memory requires no vulgar and tedious panegyric, nor need we dwell on the numerous academic honors which were showered upon him from an early stage of his career. They were the result of the fame reaped from his labors, and it is with those labors that we have to deal.

Dr. Matthews Duncan was born in April, 1826, in the city of Aberdeen, where his father was engaged in mercantile pursuits. Educated in his native city, he early displayed scientific instincts. His professional studies were carried on in Edinburgh and Paris; in 1846 he took the degree of Doctor of Medicine at Marischal College, Aberdeen. Paris, in those days, afforded the industrious student unusual opportunities for studying pathology. The mortality was high, the facilities for obtaining necropsies were great, and the system of medical education did not force study on the unwilling, at the expense, perhaps, of the able and the industrious. Young Duncan eagerly sought every case of death during pregnancy or after labor, in times when obstetrical pathology would hardly be said to exist. He thoroughly examined the pelvic viscera, connective tissue, and peritoneum in these victims of the relative ignorance which then prevailed. Thus was founded his fame as a scientific authority in obstetrics and gynecology. Thanks to him and to certain excellent French tutors and fellow-students who were associated with him in his labors, humanity gained invaluable knowledge of the treatment and prevention of diseases of the puerperium.

Attracted by his merits, Sir James Simpson engaged Dr. Duncan as his private assistant. The history of the introduction of anesthesia is familiar to every American. Our readers are, therefore, doubtless aware that, when Simpson began his experiments on chloroform, Dr. Duncan was the first person who submitted to be placed under the influence of that compound.

Dr. Duncan at this period commenced private practice in Edinburgh. He was appointed physician to several institutions, and in 1853 he began a course of lectures on midwifery at the Extra-Mural School which rapidly established his reputation as a teacher.

When thus settled in Edinburgh he soon attracted the attention and excited the admiration of the profession by the valuable contributions which he made to science and to medical literature. A fair review of all his work would fill a whole number of this JOURNAL, but some notice must be taken of his best known theories and doctrines. The first of his writings appeared in April, 1853, in the *Monthly Journal of Medical Science*, and was entitled "The Theory of Menstruation in Early Pregnancy, Superfetation, and the Site of Insertion of the Ovum." He brought forward anatomical proof of the possibility of menstrual fluid being naturally or easily derived from the lining membrane of the cavity of the uterus, up till the end, at least, of the second month. The mucous plug which sealed up the os uteri might easily become displaced. In 1855 appeared "The Statics of Pregnancy." This work contained certain deep researches into the natural philosophy of gestation. The section on the position of the fetus was a fine specimen of sound scientific work. With regard to the uterus, he held that, both in the horizontal and in the erect position of the woman, the pregnant uterus was in an oblique position. By this arrangement the uterus was preserved in a uniform condition free from many statical variations which might otherwise affect it suddenly and injuriously. Dr. Duncan also created a sensation in the anatomical and obstetrical world by the theories expressed in his "Pelvis studied with a View to Obstetrics." In this paper he demonstrated that the sacrum was not a wedge, nor was it the keystone of the so-called "pelvic arch." It was a strong transverse beam curved on its anterior surface, its two ends, the auricular surfaces, coming in contact with the corresponding parts of the iliac bones. From its position it could not, in Dr. Duncan's opinion, act as a wedge. In a series of "Papers on the Female Perineum" Dr. Duncan insisted that at first labors an inevitable posterior laceration of the vaginal orifice took place. He favored the practice of supporting the perineum in labor. He considered that lacera-

¹ Published collectively, under that title, in 1879, after the author had settled in London. The other papers above mentioned may be found in Dr. Duncan's "Researches in Obstetrics" and "Contributions to the Mechanism of Natural and Morbid Parturition."

tion of the perineum was not, in any strict sense, a cause of prolapse or procidentia. It favored complete descent of the uterus, so that restoration of the perineum was useful to resist the progress of the descending uterus, but the operation did not remove the cause of displacement. In 1869 appeared a work which was perhaps the most characteristic production of his mind and pen. This was the famous "Practical Treatise on Perimetritis and Parametritis." We all know how he drew sharp pathological and diagnostic distinctions between the two diseases. His conclusions remain contested to the present day—indeed, his theories on gynecology were never so widely accepted as were his doctrines on pregnancy and labor. The work, however, won the admiration of its readers on account of the extreme clearness with which the author expressed his propositions and conclusions. It was the forerunner of his "Lectures on the Diseases of Women," compiled throughout in the same scientific and literary style. The most remarkable, though not the most characteristic, of Dr. Duncan's works was his "Fecundity, Fertility, and Sterility," which first appeared in 1866, and formed the basis of his Galstonian Lectures "On Sterility in Women," delivered in the Royal College of Physicians in 1883. This valuable publication was the fruit of very subtle researches into questions of age, sexual temperament, and other factors in relation to barrenness and the reverse condition. In 1870 Dr. Duncan brought out an essay "On the Mortality of Childbed and Maternity Hospitals."

In 1870 Sir James Simpson died, and a contest took place for the vacant chair of midwifery in the University of Edinburgh. Dr. Duncan, Dr. Keiller, and Dr. A. R. Simpson were candidates, and the opinion of the profession was strongly in favor of Dr. Duncan, but Dr. Simpson was the successful candidate. This election caused a great deal of stir at the time, and there can be little doubt that Dr. Duncan's disappointment was intense; nevertheless he continued to work for seven years longer in Edinburgh with unabated energy.

The British Empire is controlled by a race whose instincts are essentially averse to extreme centralization; nevertheless British talent nearly always gravitates to London. Dr. Matthews Duncan was drawn to the metropolis through the fame

of his reputation as a teacher, and also through his own inclination, for London was a new field for the indulgence of his favorite resource—the education of pupils. Dr. Greenhalgh retiring in 1877, Dr. Duncan was appointed in his stead Physician-Accoucheur and Lecturer on Midwifery to St. Bartholomew's Hospital, an institution with which is associated the largest medical school in London.¹ The peculiar system which prevails alone in the British capital is open to certain objections, but it greatly favors voluntary enterprise and individual action. Dr. Duncan took full advantage of his liberty. Not only did he teach in the wards with great energy, but, holding that the regulation course of systematic lectures on midwifery was insufficient, he increased their number, delivering a lecture on every week day in the summer session. In winter he gave a clinical lecture once a fortnight—the foundation of his famous "Lectures on the Diseases of Women," a work which has passed through several editions. His discourses proved highly popular and drew large audiences, partly composed of qualified men. His pupils soon began to distinguish themselves before boards of examiners, but the still greater good which he effected by instilling high principles of professional morality into the minds of his disciples was incalculable. Of his attitude in respect to operative gynecology more will be said presently, as it needs special consideration.

During his residence in London, which lasted from September, 1877, till his death, Dr. Duncan's private practice became large and fashionable. He attended H. R. H. the Duchess of Albany in her confinement. Notwithstanding his practice and his hospital duties, he found time to get through plenty of scientific work. He was an almost constant attendant at the meetings of the Obstetrical Society of London, of which he was president in 1881, and contributed yearly one or more memoirs. They mostly related to the physics of labor, and have appeared in abstract in this JOURNAL. Perhaps the most important were the exhaustive monographs on "Lupus of the Female Generative Organs." The author caused a fine

¹ There are eleven such schools, it must be remembered, attached to hospitals in London, exclusive of an institution for female students. They must not be confounded with the "faculty of medicine" at universities.

series of water colors to be prepared, taken from life; they illustrated the appearances of several varieties of disease which he classed together as "lupus." These drawings were presented to the museum of the Royal College of Surgeons of England.

Dr. Matthews Duncan's health became greatly impaired during the early part of last spring. He suffered from gouty eczema and attacks of angina. He lectured on obstetrics as usual and with undiminished energy till the middle of June. Early in that month he spoke for the last time at the Obstetrical Society. At the end of June, however, he broke down completely and gave up all hospital work. A month later he went to Blankenberghe, a seaside resort in Belgium, where he enjoyed the company of Sir William Turner. His health improved and he bathed in the sea. Early in August he went on with his family to Baden-Baden. For long he believed that his symptoms were neurasthenic; but his father had died of heart disease, and now unmistakable signs of cardiac mischief set in. On August 17th, 18th, and 19th violent attacks of angina occurred, and edema of the lungs, albuminuria, and anasarca developed. Under the care of Dr. Gilbert, of Baden-Baden, and Dr. Aldren Turner he improved, the pulmonary and renal symptoms subsided after cupping, and it was decided to remove him to London on September 2d. At 5 o'clock on September 1st, however, he died suddenly when lying in bed comfortably supported by pillows.

The funeral took place on September 8th. The first part of the ceremony was held at St. Mark's Church, North Andley street, London, near the residence of the deceased in Brook street. The clergyman who officiated was the Rev. R. Borrodale Savory, rector of St. Bartholomew's the Greater, and son of the eminent surgeon. Notwithstanding the time of year—for London doctors take their annual holiday about this season—the church was crowded with members of the profession, including Sir William Savory, Sir Spencer Wells, Sir Crichton Browne, Dr. Quain, who represented the Queen, a large portion of Dr. Duncan's colleagues from St. Bartholomew's Hospital, and more than half the senior and junior obstetric physicians from the eleven medical schools in the British metropolis. There were besides a large number of

old pupils, English, Scotch, and Irish, and many doctors un-associated in any way with the deceased. The interment took place at a cemetery at East Finchley, to the north of London. The day was warm and bright.

Dr. Matthews Duncan died just upon the eve of his retirement from his hospital and teaching appointments. The instruction of his class was to him not so much a labor of love as an intense pleasure, and he certainly did not look forward to retirement with enthusiasm. The loss which his family and the profession have sustained is indeed irreparable. To his wife and children he was devotedly attached, and all must sympathize with them in their bereavement, sustained at a time when they were looking forward to days which he might have spent more freely in their company than during the period of his arduous though congenial academic duties. The profession, too, will sorely grudge the loss of many spare hours which he assuredly would have utilized for their benefit. As the writer of these lines can testify, no member of the profession, particularly of that branch with which this JOURNAL is concerned, could fail to be the better for the amount of medical knowledge, medical lore, and medical ethics which flowed from Dr. Matthews Duncan's lips in the course of an hour or two spent in his company.

Dr. Matthews Duncan will best be remembered as a teacher in the widest sense of the word, an educator of unqualified youths, and an instructor of his profession. Many men on the staff of medical schools have, of their own accord, devoted much more time to clinical teaching than was demanded by the regulations of the curriculum. Few, very few, however, have ever gone so far as Dr. Duncan, and of their own free will increased the number of systematic as well as clinical lectures required by the terms of their professorship. The natural result of his disinterested industry was the intense reverence with which his name was and is held by his pupils. None of us can fail to admire the energy with which he continued his self-imposed professional duties to the last, notwithstanding heavy professional work and severe physical exhaustion due to failing health.

Science must, we believe, most commend Dr. Matthews Duncan as an obstetrician. His skill in the lying-in chamber

was well known. He was second to none of his compeers in doing all that is possible to maintain obstetrics as a science and at the same time as a profession suited for men of culture, refinement, and education. He thoroughly investigated the physics of pregnancy and labor. His contributions to literature on the subject of the position of the fetus are amongst the best evidences of his correct method of research. He experimented on the normal fetus out of the uterus, placing it in fluids of the same specific gravity as the liquor amnii, and found that it floated in such fluids in the same position as it naturally assumed in the uterus. When the fetus became decomposed it floated in a different manner, just as, under the same circumstances, it tended to lie in a different position in the uterine cavity. Thus Dr. Duncan trusted to direct experiment, instead of beginning by an assumption that a vital force in the uterine walls or some mechanical arrangement in the bony pelvis forced the fetus into the right position, and then setting to work to prove the assumption.

Dr. Matthews Duncan held that the obstetrician should devote himself to the treatment of pregnancy, labor, and the puerperium, undertaking at the same time the management of diseases of non-pregnant women as far as therapeutic aid would avail. He distrusted the practice of abdominal section by obstetricians. "Nobody can be a Sir Charles Locock and a Sir Spencer Wells at the same time," he would say; and he acted up to his convictions, although his most distinguished pupils have not all followed his example. This matter leads to another subject—Dr. Duncan's powers and opinions as a gynecologist. Most assuredly the profession in general never held him to be so recognized an authority in diseases of women as in obstetrics. He was none the less one of the soundest of pathologists and the best of clinical observers. His saying above quoted will clear away a great deal of misunderstanding; being a practical obstetrician, his bent was towards obstetrics. He never attempted "major" gynecology.¹ As to practical "minor" gynecology, he cannot be

¹ The arguments which he put forward in a paper entitled "Is Ovariectomy Justifiable or Not?" (*Lancet*, February, 1857) sound strange in the present day. They were then far from fallacious, for their end was the confutation of faulty arguments advanced by operators of small experience.

blamed for treating it with distrust when we bear in mind what the term implied in the days of his youth. We cannot be surprised if he occasionally overlooked what might be good when he had to deal with so much that was bad. It was inevitable that his training and surroundings must lead him to condemn operations which other good men practised on grounds which they deemed perfectly justifiable. This explains his aversion to trachelorrhaphy. Again, Dr. Duncan's peculiar views on gynecological ethics were the results of his instincts as a teacher. He considered that the student must first learn the nature of the parts with which he has to deal, and then acquire the art of detecting the diseases with which those parts are affected. This was his education, and when thus educated, and not till then, he could see an operation performed with profit; not till then was he competent to judge whether the operation was justifiable. Dr. Duncan strongly objected to a system which teaches the bare steps of major operations and justifies them on the score that a few experts can claim successful results. The student, however, is ever eager to see and hear of big surgery, and we all know that the teacher must cool such pernicious ardor and show him that he has many things to learn before he can profitably study and practise operations. Dr. Duncan constantly acted as the good teacher in this respect. The consequence was that many of his remarks which were meant for the classroom were sometimes taken as unjustifiable criticisms on operators of high experience. His real views on ovariectomy and allied operations may be better judged by the admiration which he often expressed for the work of his friend Dr. Keith. We must not harbor the impression that Dr. Matthews Duncan distrusted ovariectomists to the last because his system discouraged any ill-advised efforts to manufacture Wellses and Keiths.

ALBAN DORAN.

TRANSACTIONS OF THE AMERICAN GYNECOLOGICAL SOCIETY.

FIFTEENTH ANNUAL MEETING.

HELD IN BUFFALO, SEPTEMBER 16TH, 17TH, AND 18TH, 1890.

FIRST DAY—MORNING SESSION.

The President, DR. JOHN P. REYNOLDS, in the Chair.

Among the invited guests were Dr. Rosebrugh, of Canada; Dr. J. A. Temple, of Canada; Dr. Geo. Keith, of Edinburgh; Dr. Buckmaster, of New York; Dr. Robb, of Philadelphia; Dr. Tremaine, of the U. S. Army; Dr. Roswell Park, of Buffalo; and Dr. Carpenter, of Cleveland.

DR. ROSWELL PARK, of Buffalo, delivered the

ADDRESS OF WELCOME,

concluding with the remark that the men of northwestern New York also appreciated the work of the members of the Association convened, and would add their greetings were they present.

DR. A. W. JOHNSTON, of Danville, Ky., read a paper entitled
THE DIAGNOSIS, PROGNOSIS, AND TREATMENT OF EXTRA-UTERINE
PREGNANCY.

The placenta develops from the adenoid tissue of the endometrium, which is ordinarily sealed from contact with the ovum by its protective coat of epithelium. Given a denuded surface, the development of the placenta further depends upon the agency of the sperm cell, which acts as the sponge or skin graft in initiating the formation of new tissue. The exfoliation of the placenta at term is due to the exhaustion of spermatogenic influence.

While the utero-tubal tract and the peritoneal surface furnish suitable conditions for the development of the placenta, the ovary does not possess the necessary lymphatic structure. The reader of the paper had never seen an ovarian pregnancy. Dr. Mann's specimen exhibited before the meeting in Washington was, he believed, a dermoid cyst. Apparent ovarian pregnancies had their origin in an unusual formation of lym-

phatic tissue, so located as to distend and incorporate ovarian tissue in their growth.

The tubal form of extra-uterine pregnancy had its origin where there was loss of the ciliated epithelium of the tube from any cause, such as stricture, polypus, inflammation, or altered nutrition. Diagnosis of extra-uterine pregnancy is rarely made before rupture, when laparotomy is the only resort. Treatment by electricity is dangerous in practice, wrong in principle, and disastrous in results. In time it will rank with tapping of the abdomen among the curios of the past.

Discussion.

DR. M. D. MANN, of Buffalo, stated that conception probably occurred in the tube or beyond. The majority of ectopic gestations were tubal. There were two exceptions, viz., the ovarian and the abdominal. The question of abdominal pregnancy is still *sub judice*, many maintaining that conception always occurs in the tube, the ovum arriving in the peritoneal cavity only by the rupture of the tube. He did not believe that all cases had this history. Of the possibility of ovarian pregnancy he had no doubt. The specimen exhibited in 1888 showed a fluid like the amniotic fluid and a well-formed placenta. This placenta was easily detached from the adjacent structure. It did not spring from it, as would have been the case had it represented a papillomatous growth. The specimen could be called a dermoid cyst only by a process of reasoning which assumed that anything may be found in a dermoid cyst: placental tissue may be found in a dermoid cyst; hence a tumor containing placental tissue must be a dermoid cyst. The specimen was examined microscopically and gave unmistakable evidence of placental development.

The speaker conceded that early diagnosis was rare, but stated that tubal pregnancy had been in a certain number of cases diagnosed before rupture. He did not object to laparotomy in any case, if done by a skilled operator, but urged that electricity in early cases had an equally good result. Personally he preferred the latter treatment. He had performed abdominal section 200 times, and in the last 100 cases he had had but 1 death due to the operation. Timidity in regard to operating could not, therefore, be urged as his reason. He used the faradic current, as strong as it could be borne, and restricted the treatment to the period preceding the fourth month. He had not seen heart failure from shock to the sympathetic, nor the continued growth of the placenta referred to. The dangers of rupture or of suppuration were also chimerical. Of the 50 cases reported by Brothers, but 1 had suffered from this accident, and this case had advanced beyond the

fifth month, making it an unfit case for the treatment. Prompt recovery had occurred in all of his own cases; while the patient's dread of an operation, the shock and anxiety it entailed upon friends, together with the more or less disagreeable sequelæ of laparotomy, were all in favor of electrical treatment. The diagnostic significance of the method was also worth consideration. Pregnancy yielded to faradism as no other condition did.

DR. J. M. BALDY, of Philadelphia, recognized the frequency of spontaneous cure. In many cases the sac ruptured into the folds of the broad ligament, with the death of the embryo and the absorption of the resulting hematocele. Expectant treatment could not, however, be defended. Difference of opinion existed only in regard to treatment before rupture. The speaker did not favor electricity. There was uncertainty even in regard to the killing of the fetus. Coe had reported a case where, after a strong faradic current, there had been pain and collapse, and exploration had revealed a normal pregnancy of three months. Dr. Buckmaster had had a case in which the fetus had resisted a current of 20 milliamperes. In another case strong currents of both galvanism and faradism had been used, and later a growing tubal pregnancy had been removed.

The delay required for the trial of electricity was dangerous. Tubal pregnancy not infrequently ruptured before the thirteenth week. Among 33 coroner's cases in Philadelphia were ruptures at both an earlier and later period.

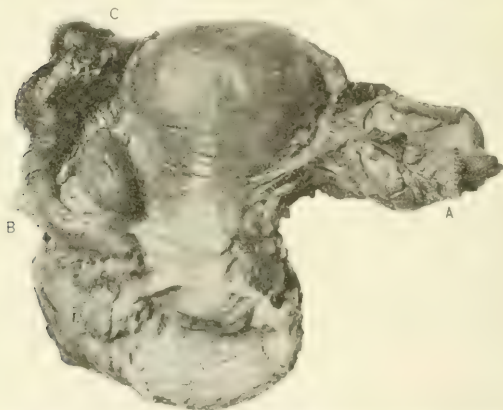
The treatment itself was not harmless. Brothers had cited 4 cases which had presented alarming symptoms during or after the application. In his own experience alarming peritonitis had resulted from a single treatment.

The trouble has not all been disposed of when the fetus has been killed. Tuttle reports the case of a fetus passed by rectum after electrical treatment; also the sac and its contents not infrequently have to be removed later by laparotomy. Hanks reports cases in which the fetus has been passed by the rectum, bladder, and uterus. Pelvic hematoceles remain, and have been found in cases from three months to three years after the treatment. The speaker was, therefore, in favor of laparotomy whenever and wherever the diagnosis of extra-uterine pregnancy was strongly suspected. E. P. Montgomery, formerly strongly in favor of treatment by electricity, had in 1890 become an advocate of laparotomy in all cases. Geo. Engelmann, too, with increased experience, would operate now in all cases.

DR. SKENE, of Brooklyn, reported

A CASE OF EXTRA-UTERINE PREGNANCY

for DR. F. A. JEWETT, accompanying the report by a photograph of specimen, removed August 27th, 1890, from the body of a woman of 29 years. The last menstrual period had been short, lasting but one or two hours. The woman had had no subsequent hemorrhage and no pain until August 22d, when, while at dinner, she had felt faint and had complained of general abdominal colic radiating from the median line. Vomiting and abdominal tenderness developed. August 23d A.M. there were recurring paroxysms of pain. On the evening



A, pavilion of right tube; B, pavilion of left tube, adherent; C, site of rupture.

of the 23d the pain had subsided, but the abdomen was tender and the pulse was 96. On the night of the 23d the pain recommenced, starting from the pelvis and radiating down the thighs. There was a slight flow of blood from the vagina, but this, with the pain, was ascribed to the catamenia which was due the following day. There were no striking symptoms at that time. On the morning of August 24th the pulse was 120 and the temperature 100.4°. At 11 A.M. collapse developed, and the patient died before assistance could be summoned. The autopsy by Dr. Barlow showed the abdominal cavity full of blood. There were evidences of old pelvic peritonitis upon the right side. Upon the left side the tube had ruptured three-quarters of an inch from the cornu near the middle

part of the posterior aspect. The rent was 4 mm. in length; the ovum was *in situ*. The uterus was 3 inches in depth, the diameter between the cornua was $1\frac{3}{4}$ inches, its greatest thickness $1\frac{1}{4}$ inches. The os externum admitted a lead pencil. A moderate bulging of the body of the uterus had been the only sign of pregnancy previous to rupture.

Dr. Skene added one or two thoughts in regard to the question of diagnosis. For treatment by electricity even a reasonable certainty was desirable. Patients were safer if their condition was known to some one, even though immediate procedures were not instituted. Personally he believed in the possibility of diagnosing this condition before rupture; he believed it to be as easy of diagnosis as any known affection of the sexual organs of woman. If the relations of the parts are complicated by the results of former peritonitis, the same might be said of other conditions. We have here a history and we have physical signs, both as positive as to their interpretation as the history and signs of pyo-salpinx or ovarian cyst. It is true that the opportunity for diagnosis before rupture seldom occurs. It is also true that in cancer of the uterus patients, as a rule, defer consultation until it is too late for cure.

One difficulty in diagnosis had not been noted. He referred to the possibility of confounding extra-uterine pregnancy with pregnancy in one horn of a uterus bicornis. A case in point was that of a young woman treated for dysmenorrhea from a flexed canal in a uterus unicornis. The patient recovered from her dysmenorrhea and became pregnant, when the physical signs exactly simulated those of a tubal pregnancy. He had been saved from error simply by his knowledge of her previous condition.

In treatment electricity might be tried. There were no evidences that it was especially dangerous. It did not take away the chances or make the case less amenable to surgical treatment. The arguments in favor of laparotomy were a good deal damaged by the fact that these were, as a rule, emergency cases and did not always fall into "competent hands." He was in favor, therefore, of the use of electricity, reserving laparotomy for the last resort.

Discussion.

DR. JAGGARD, of Chicago, had listened with interest to Dr. Johnston's views in regard to placental formation. A committee with money at its disposal was suggested as an aid to their development. The theory that the sperm cell determined the site of the placenta was not altogether new. Halnemann had hinted at some such theory. To say, however, that

the cessation of the spermiatic influence initiated labor carried the theory possibly too far.

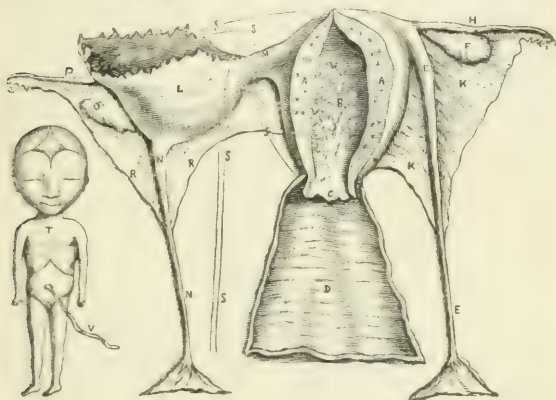
It is useless to discuss a fact of nature. Ovarian pregnancy has been established. Six cases have been referred to. Ovarian pregnancy does exist. Without microscopic evidence, however, it is useless to discuss these cases. A certain number of cases of hemato-salpinx are really cases of tubal pregnancy, decidual cells and villi of the chorion having been demonstrated. In rupture, the escape may be into the broad ligament, forming hematoma of the broad ligament or pregnancy of the broad ligament; the ovum may remain in the sac, acting as a tampon, or we may have the formation of a retro-uterine hematocele. All of these terminations are favorable. Lastly, we may have escape into the abdominal cavity. In cases of tubal rupture death is the exception. He believed with Dr. Skene that we had symptoms enough to attract attention to this condition, symptoms enough for diagnosis. He had had a recent typical case where he had diagnosed extra-uterine pregnancy before rupture, operated, and removed an intact ovum. There was, in this case, slight blue discoloration of the anterior vaginal wall, with softening and compressibility of the lower uterine segment. The uterus was deflected to the right of the median line, retroflexed, enlarged, and of a peculiar doughy consistence. In the speaker's opinion the latter constituted one of our most reliable signs of pregnancy. To the left there was a soft tumor the size of a lemon, resembling an ovarian cyst. The subjective symptoms had been amenorrhea of six weeks' duration, and pain in the pelvis. The operation was done two days after the diagnosis, the tube was removed close to the uterus, and the cavity stuffed with iodoform gauze.

This patient differed from the classical case in that she was a Jewess, young, only 30 years of age, a multipara; and in that the pregnancy was upon the right side, the rule being in favor of old multiparae with a long interval of sterility or of sterile primiparae. The speaker believed the evidence conclusively in favor of laparotomy before rupture; he referred to ten cases of diagnosis before rupture, with operation. All of these except one recovered—a result which was better than that of any other mode of treatment.

The objections to electricity were the danger of delay and the uncertainties of diagnosis. After the eighth week, too, it was hopeless to expect the resorption of the fetus. After the formation of the placenta the fetus was never absorbed.

In the case first seen after rupture he would operate only where there was free intraperitoneal hemorrhage. Hematoma of the broad ligament, or retro-uterine hematocele, would be against laparotomy.

DR. H. P. C. WILSON, of Baltimore, agreed with the remarks of Dr. Skene. While tubal pregnancy was the most frequent variety, the ovum was sometimes fecundated and dropped into the peritoneal cavity. Ovarian pregnancy undoubtedly existed, but was very rare. We could make as accurate a diagnosis of this condition as of many others. Having arrived at a diagnosis, electricity might be used prior to the fourth month. The fetus would be probably destroyed; but if not, surgical measures might still be resorted to. After the first three months removal was the only justifiable treatment. During the earlier stages of ectopic pregnancy the woman, as a rule, felt well and could not be induced to



MAURICEAU'S CASE OF ECTOPIC PREGNANCY.

consent to laparotomy. He had never seen the bad results from electricity to which reference had been made. He would therefore use electricity in the early stages, and resort to laparotomy later if required.

DR. KELLY, of Baltimore, referred to these discussions as a heritage. Mauriceau in 1669 quaintly described and figured a case of ectopic pregnancy occurring in a woman 32 years of age, who had died after three days of torturing pain.

Von Graaf, the discoverer of the Graafian follicle, believed that arrest of the ovum in its descent through the tube was the cause of death in these cases. Mauriceau regarded the sac as a hernia from the uterus. In point of fact the pregnancy in Mauriceau's case was not tubal, as the round ligament was not displaced outward. It was a case of pregnancy in the rudimentary right horn.

Deutsch gave us in 1792, from Halle, some of the best plates of abdominal pregnancy ever published. These engravings were life-size and very accurate.

The primary varieties of extra-uterine pregnancy were the interstitial; three tubal forms, isthmial, isthmio-ampullar, and ampullar; tubo-ovarian; ovarian; and abdominal, the latter doubtful. A number of celebrated cases of unquestionable ovarian pregnancy, answering all the requirements of a scientific inspection, had been reported. Among these are the cases of Gottschalk, reported in 1886, and those of Patenko and Leopold and Mann.

The diagnostic signs of an ovarian pregnancy are that the tube must be entire and the sac hold the relation held by the ovary to the uterus. The sac contains ovarian tissue, and, most important of all, the ovarian ligament connects the side of the sac with the uterus. This relation is as constant as is the relation of the round ligament to interstitial pregnancy. In a case of *tubal pregnancy* recently operated upon in the Johns Hopkins Hospital, the sac wall had contained ovarian tissue. The evidence afforded by the simple presence of ovarian tissue was therefore not conclusive of an ovarian pregnancy.

In regard to the diagnosis of extra-uterine pregnancy, the original status of the question assumed that diagnosis at any time was doubtful. Now, after having been driven out of this position, it has been shifted so as to include only diagnoses before rupture. The speaker referred to a case of his own where the condition was diagnosed before rupture, was operated upon in the presence of five gentlemen, and an intact ovum removed from the right tube. It was, he believed, the first case of diagnosis and operation before rupture in this country.

The case was that of a woman of 22 years, married three years, one child and one premature birth. The woman was first seen in December, 1885. From July until the middle of November she had not menstruated. In November she had passed what she described as a "piece of flesh." She had then, too, noticed a lump low in the left side. A tumor was found anterior to the cervix, extending into the sacral hollow and reaching half-way to the umbilicus, ovoid, smooth, tense, and fluctuating. At the first examination the line of separation between the sac and the uterus was not felt, but at the second examination it was detected and the diagnosis made. The tumor diminished in size while under observation. The speaker took no special credit for the diagnosis, as he had been very slow about it, and the woman might in the meantime have died a hundred deaths. The operation was performed March 20th, 1886, with the removal of an

unruptured sac occupying the middle portion of the tube. The appearance and size of the sac are shown in the diagram. The speaker simply desired to put the case upon record as the first in America, and probably the second in the world, of diagnosis and operation before rupture. Diagnosis before rupture was certainly possible, and, further, in any given doubtful case it was always wiser to give the worst interpretation until it had been proved to be of a simple nature.

The important signs of extra-uterine pregnancy are: 1. Amenorrhea followed by an irregular, atypical flow. 2. Pain in the lower part of the abdomen. 3. A fluctuating tumor. 4. An enlarged uterus. 5. The discharge of a decidual membrane. 6. Milk in the breasts. 7. Diminution in the size of the tumor while under observation, implying, of course, the death of the fetus. Positive cases of extra-uterine pregnancy show the most of these signs; doubtful cases will show only a part of them; while in a third class none of them are pre-

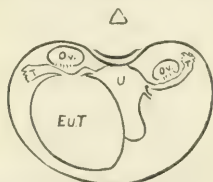


DIAGRAM OF DR. KELLY'S CASE.

sent, and the condition will only be discovered after abdominal operation.

Many cases must recover spontaneously. This was shown by experiments upon the lower animals and the fact that cases diagnosed simply as hematocele so often recover.

Having the small movable tumor of extra-uterine pregnancy, it was as easy to remove it as to remove a small ovarian cyst or tubal accumulation. The speaker had, however, no fault to find with those who preferred to use electricity and wait to see the result, especially in those most difficult cases to operate upon where the mass lay within the broad ligament. The use of electricity was harmless, and did not exclude later surgical interference. Where the fetus was living and the case presented at term, he would open the abdomen, study out the relations, and then proceed to remove the whole sac, if this could be done with ease. Where the placenta was favorably situated it should be removed, but where attached to intestines or over large blood vessels or any important viscus he would simply remove the fetus and drop the funis back into the cavity, carefully excluding sepsis, and later re-perform laparotomy, if necessary.

Two cases had been operated upon in the Johns Hopkins Hospital during the last year—one, five months beyond term, unruptured tubal, by Dr. Robb. This case had suffered from fatty liver and extensively diseased kidneys, and had died from these lesions. The other had been operated upon by himself after rupture of the tube. This case also was that of a woman five months beyond term. The speaker had made a positive diagnosis here also, and had stated it in the presence of twenty to thirty spectators before the operation. The fetus, placenta, and sac were removed together with the right tube and ovary. Two drainage tubes were inserted. The patient recovered rapidly.

DR. BUCKMASTER, of New York, referred to the case quoted from his records by Dr. Baldy, in which a current of twenty milliampères failed to kill the fetus. He wished to say that the current in this case had to traverse a fibroid tumor also. Further, a fetus within the uterus presented a resistance not found in the case of tubal pregnancy. He thought, therefore, that this case should not be quoted against the treatment.

FIRST DAY—AFTERNOON SESSION.

Discussion upon Extra-uterine Pregnancy, continued.

DR. TEMPLE reported a case of diagnosis and operation before rupture. The case was that of a woman of 36 years: three children, the youngest 15 years. There had been no intervening pregnancy. Menstruation was absent in July. In August the patient had suffered from hemorrhage and attacks of severe pain. Dr. Sutton was in the hotel where she was staying, and had diagnosed extra-uterine pregnancy. It was after this that the speaker had first seen her. There was then no pain, but the patient was weakened by loss of blood. A tumor was found, posterior to the uterus and to the right, the size of a hen's egg. It was very low, adherent, and the adhesions were tolerably firm. The tube was removed without rupture. The pregnancy was between the seventh and eighth week. There was some hemorrhage, but this was controlled by hot water. The patient did well until the eighth day, the temperature never being over 101°, and that only upon one occasion. The stitches were removed upon the sixth day. Upon the eighth day the patient developed talkative mania. Upon the twelfth day she became semi-comatose, and upon the twenty-third day she died. There was no albumin in the urine and no paralysis. The bowels were evacuated regularly. The patient was nourished by means of the stomach

tube for eleven days. Upon the introduction of the tube she would draw up her knees. This was the only evidence of consciousness during that period.

The speaker thought that the indications for operation had been clear, and that the correct line of treatment had been followed.

DR. MANN again referred to the diagnostic signs in his case. The placenta was not attached to the sac wall, as it would have been were it instead a papillomatous growth. The microscopic evidence, too, confirmed his diagnosis, and did not in the least support a theory of adenoma. The question of the possibility of ovarian pregnancy should, he thought, be settled by the evidence of the case of Dr. Gottschalk and that of the other cases which had been cited.

DR. JENCKS, of Detroit, referred to a case seen two weeks after rupture. The patient was then moribund. He thought that laparotomy would have saved the patient had the operation been done even forty-eight hours previously.

DR. JOHNSTON closed the discussion. He had not considered the growth in Dr. Mann's case an adenoma, but an adenoid papilloma, composed not of epithelial but of mucoid tissue. He had seen this formation in a case of double dermoid cyst in a young lady of 20 years. In the cyst of one ovary was a well-formed upper jaw, and in that of the other mucous tissue—an attempt, perhaps, to form intestine or a lymphatic gland. He had not denied the existence of ovarian pregnancy; he had simply said that he had not himself seen a case.

In regard to treatment by electricity where we had rupture into the broad ligament, the tumor was encysted, hemorrhage was arrested, and the case resulted in spontaneous cure. Such cases were often reported as cured by electricity when they would have been just as well off if let quite alone. In other cases the patient was made worse by this treatment, suppuration occurring and the fetus being subsequently discharged, as had been stated, by the uterus, bladder, or intestine. Errors in diagnosis, too, presented a very great objection to this treatment.

When operating after rupture he would wait for the subsidence of shock, if hemorrhage were not at the time going on. It was never too late for the operation, however, if the woman were not absolutely dying.

Mania after laparotomy occurred, he thought, only in cases of hereditary taint. He had himself had such a case, where there had been mania and a low wandering delirium, and at the end of ten days the patient had died of shock and collapse. He thought the gentlemen would find in all such cases a bad family history.

DR. W. C. FORD, of Utica, read a paper

ON THE QUESTION OF AMPÈREAGE IN THE TREATMENT OF FIBROID TUMORS BY ELECTRICITY.

Currents of tension, or of high voltage, were useful for cauterizing purposes. Electrolysis depended, on the contrary, upon volume, or ampèreage. Only voltage enough was required to push through the resistance. Voltage, or tension, was obtained from a number of small cells, volume from larger cells, a small number only being required. Fifty cells of the bichromate of mercury battery with a voltage of 100 and an ampèreage of 1 were not so effective in chemical decomposition as four 1-quart cups having a voltage of 8 only and an ampèreage of 6.

The water rheostat increases tension, or voltage. In the treatment of fibroid tumors we want chemical disintegration, not a cauterizing effect. The speaker exhibited plates of about three or four times the size found in the ordinary bichromate battery. Of these he used only twelve cells in ordinary gynecological work. The carbon and zinc plates were also very closely approximated, so as to diminish the internal resistance.

In the speaker's opinion many physicians had unsatisfactory results from electricity because not using it in the most advantageous way. If they would aim at volume in their current for electrolysis, they would get satisfactory results.

Discussion.

DR. TREMAINE had treated sixteen cases with the large abdominal and intra-uterine electrodes, and had never been able to avoid cauterizing with the intra-uterine pole. In the electrolytic effect described he would like to know what becomes of the abdominal wall in such a circuit. He had been disappointed in the electrical treatment of fibroids. In several cases the hemorrhage had been arrested; and in several a positive retrogressive metamorphosis had been induced, but this might have been coincident only. No convincingly positive results had been obtained.

DR. FORD replied that the positive or indefinite pole was used upon the abdomen, and, the current being dispersed through so large an area, electrolysis was not produced. Even in the treatment of hemorrhage he made his intra-uterine application with the negative pole. A hemorrhagic fibroid was, however, difficult to relieve by electricity or anything else. He had been less successful with this than with any other class of cases. Cauterization was here required; the positive had no advantages over the negative pole, unless strong enough to produce cauterization.

DR. TREMAINE inquired in regard to the amount and character of the fluid decomposition about the negative electrode.

DR. FORD replied that with large cells and an ampérage of 10 to 15 he had had fluid run out of the vagina after three minutes' intra-uterine application of the negative pole. This fluid was alkaline, while the large abdominal plate was found to be slightly acid. A chlorine odor accompanied the process. The large abdominal electrode was imperative. With a small—six by eight inch—electrode he had blistered the abdomen so as to denude the skin.

DR. WILSON asked what electrode was employed for the intra-uterine application in bleeding fibroid.

DR. FORD replied that he had used the blunt end of a platinum needle. Carbon he had found brittle and difficult to get. To prepare his platinum electrode he hammered platinum foil on to brass wire. Platinum plate was of little value; it disappeared very soon under a strong current.

DR. SKENE believed that the abdominal wall and all the tissues intervening between it and the fibroid were acted upon; the tumor was, however, of a lower vitality, and hence more susceptible to decomposition. The more highly developed tissue resists this action, and even when it suffers reacts, so that no permanent harm is done. Electrolysis, as he understood it, consisted merely in the decomposition of fluid tissues, the hydrogen going to the negative and the oxygen to the positive pole. It was only necessary to lessen the nutrition of a fibroid to diminish its size. Cauterization was not necessary to stop a growth or even to diminish its size. If we avoid cauterization we avoid all of the dangers of electrolysis. For the abdominal electrode nothing was better than clay. The positive electrode in the cavity of the uterus produced a drying-out of the tissues, with a resulting stenosis and a real or apparent cauterization. The negative pole in the cavity never gave this result.

DR. TREMAINE asked whether any of the members could refer to cases of their own which had been cured. He could not himself mention a single one out of his sixteen cases. He wanted to find out whether his methods were at fault, or whether others had equally unsatisfactory results.

DR. SKENE stated that if the gentleman meant by cure the entire disappearance of the tumor, he could point to but two cases in his own practice and one or two in the practice of others, and this disappearance might even have been spontaneous. If, however, by cure were meant arrest of growth and relief of symptoms, he could point to a considerable number of cases. "Symptomatically cured" was an expression which was worth preservation in this connection. He referred to the work of Dr. Keith, where, out of 200 cases

treated by himself in this sense. The self and son, 70 per cent had been cured in symptoms, the grow patients were entirely relieved of their cases even diminished of the tumor was arrested, and in many ports it was well to rest in size. In weighing Apostoli's re-a discovery as Apostoli remember that any man who makes such He believed that all men made will be enthusiastic about it.

Dr. WILSON preferred carbon do good work are enthusiasts. trode in bleeding myoma. He son for the intra-uterine electrode seemed no resort but hysterectomy referred to a case where there and again, and the hemorrhage was. He had curetted again time, but would return. The case could be controlled for a Skene's sense by the use of the carbon electrode and the positive pole. For two years there had been no return of the hemorrhage. The tumor had not entirely disappeared, but the woman was healthy, comfortable, useful, and happy.

The value of electricity depended upon the variety of fibroid. The submucous and the subperitoneal variety of not affected by it, while in the soft, edematous fibroid were fibroid electricity actually promoted growth. It was a variety of case of the intramural fibroid, the tumor being three-fourths in the or four-fifths embedded, that galvanism cured. Even in these cases the tumor rarely disappeared altogether.

Dr. MYNTER referred to the fact that the aggregate of small cells giving an intense current were the batteries usually employed by physicians; the large-celled batteries were seldom seen unless the physician built them up himself. He recalled a case in which he had used forty-two of the small elements upon a fibroid, producing a slough, with a cavity into which he could insert the finger, through the vaginal wall.

Dr. GEO. KEITH, of Edinburgh, called attention to the necessity for accurate diagnosis in weighing the value of this treatment. He recalled the case of a distinguished surgeon who had for ten months treated an ovarian tumor with electricity, thinking it a uterine fibroid. The patient was not benefited. He did not quite agree with some of the previous speakers, as he believed that there was a cauterizing action from the intra-uterine electrode in these cases.

Dr. ROSEBROUGH, of Canada, inquired whether Dr. Wilson and Dr. Skene had employed any medical treatment in their cases of cure.

Dr. WILSON had discarded ergot many years ago. He had used it both by mouth and hypodermically, and had obtained no effect from it in fibroid tumors. In connection with the electrical treatment he had used only the remedies necessary to regulate the bowels and nervous system.

Dr. GEHRUNG, of St. Louis, asked whether Dr. Ford used puncture.

DR. FORD referred to the question of cure. He had seen four or five cases in which the tumor had disappeared entirely, not, however, until three or four months after the discontinuance of treatment. He never punctured where he could get into the uterus. The chances were, however, much better from puncture. The puncture itself disturbed the vitality, and was admissible where the tumor could be reached. In puncturing he used a trocar and canula instead of a needle. The tube he left in for several days after the operation where fluid continued to come away. The trocar puncture was especially favorable where a pus cavity or a fluid cavity was entered. Both were liable to be encountered in a fibro-cystic tumor. The aspiration and syringing of these cavities became then a simple matter. Where the tumor was adherent, filling the pelvis and threatening the bladder and rectum, great relief was obtained by puncture and electrolysis. In one recent case the pelvis had been filled with an immovable mass. After two punctures the tumor had diminished in size and become movable, so that it could be supported by a pessary. He had never found the soft tumor which would be made to grow by galvanism. In a very hard tumor, however, you could make no impression without a cauterizing effect.

Dr. Skene never used ergot in connection with electricity. Ergot has no value in the treatment of fibroids except for the submucous variety with a tendency to become pedunculated. Electrolysis was not required in such cases. In treating metrorrhagia he always commenced by curetting and followed with electrolysis. He used iodine in the cavity, too; it was a good disinfectant and controlled the tendency to proliferation. He gave *hydrastis canadensis*, and thought it superior to ergot in its control of the circulatory conditions in the uterus.

Dr. Ford, in closing the discussion, desired to emphasize the fact that the current was the important matter, and not the form or variety of the electrode used.

SECOND DAY—MORNING SESSION.

DR. HENRY T. BYFORD, of Chicago, read a paper entitled

VAGINAL FIXATION OF THE STUMP IN ABDOMINAL HYSTERECTOMY.

He had last year reported to the Society one case treated according to this method. He had now used it upon eight cases. The second operation was performed December 14th, 1889; the third, February 15th, 1890; the fourth, April 9th, 1890; the fifth, April 17th, 1890; the sixth, April 18th, 1890. All of

these made a good recovery. The seventh operation was done April 25th, 1890. The patient died of general septic peritonitis. The death was unconnected with the treatment of the stump, and post-mortem examination showed that the peritoneal cavity was completely and safely shut off, and that it was the uterine end of the stump which sloughed. The slough separated from the tenth to the fourteenth day. The steps of the operation were: After the removal of the tumor, separation of the bladder from the rectum, tearing through the anterior vaginal wall, anteverting the stump with the aid of a tenaculum in the vagina, and the union of the anterior cut edge of the bladder peritoneum with the posterior peritoneal surface of the stump. A clamp was then applied and left in the vagina until the slough came away, on the tenth to the fourteenth day. The wound in the supravaginal cellular tissue was stuffed with iodoform gauze. The reader referred to the



dangers incidental upon ventral fixation, the traction, and the hernia which often followed.

DR. KELLY spoke of the different methods of stump treatment and their limitations. There are four classes of fibroid tumors of the uterus. First, the small, submucous, intra-uterine, pediculated tumor; second, the tumors which had to be removed with a portion of the uterus by abdominal incision—cases for myomectomy; third were the tumors which were removed by supravaginal hysterectomy, and in which a pedicle was readily formed; last were the cases of tumor which spread laterally in the broad ligaments to the vagina and posteriorly where it was almost impossible to get a pedicle—atypical cases which very often die during the operation from hemorrhage and shock. In the simpler cases the mortality should with any treatment approach that of ovariectomy.

The pedicle was either dropped into the abdominal cavity and the incision closed, or the pedicle was treated outside of the cavity. His own practice combined the intra- and the extraperitoneal methods. The intraperitoneal method had been abandoned on account of the mortality. Zweifel, in his book upon the treatment of the stump, advocated a tight continuous suture, such as was used in an aneurismal varix. He-

gar applied a rubber ligature and suspended the stump outside the abdominal wound. The results had been excellent, although the method had been condemned as unsurgical. Where the stump was short, however, the dragging up of the stump was apt to produce sloughing of the tissues below and protracted convalescence or death. Another method suspended the stump from the lower angle of the abdominal wound, six, eight, or twelve sutures being used, the parietal peritoneum being united to that of the stump. A clamp was applied, and the whole was covered by a dressing which was not disturbed for six or eight days. He had two cases now under treatment by this method. He had done altogether nine cases, with but one death, and that was from visceral lesions. Dr. Byford's method presented a valuable alternative to Zweifel's, Hegar's, and his own method in certain simple cases. When, however, you had the broad pedicle to deal with, which was sometimes almost as large as the calf of the leg, pan-hysterectomy seemed the only resort. The method, too, added to the technique of the operation. In its favor, however, was the avoidance of the risk of hernia and the excellent drainage which it furnished. He should think it as good a method as any other. More he could not say until he had seen it tried in a wider field.

DR. JOHNSON called for Dr. Polk's experience with the fourth class of cases referred to by Dr. Kelly.

DR. POLK stated that this class really embraced all of the difficult cases, and so difficult were they that if the mortality of these cases alone were received as evidence it would furnish the enemies of hysterectomy admirable material for comparison with the favorable results of electricity in the treatment of fibroid tumors. It was incumbent upon surgeons to remove the stigma which rests upon operative interference in this class of cases. The problem was to relieve the patient and yet keep down the mortality rate.

His own plan of operation was a modification, or rather an adaptation, of that of Dr. Miner, of Buffalo, as applied to the non-pediculated ovarian tumor. The process was one of enucleation. However broad the attachment, you could rely upon a blood supply from four well-established branches, two upon each side, the hemorrhage from adhesions being so slight as not to demand consideration. He secured the two ovarian and two uterine arteries, and then proceeded to the enucleation with freedom from risk. It was by no means easy, however, to strip off the outer covering of such a uterus. It was more like a dissection, especially on the posterior aspect. Over the anterior surface the peritoneum was apt to be as loosely attached as over an ovarian growth.

He made the abdominal incision, delivered the tumor, and

then tied from above downward; he allowed for shrinkage of tissue, and cut the tumor loose as tied. After tying the ovarian arteries and the pampiniform plexus he proceeded to three, four, or five inches from the junction of the cervix with the body of the uterus, and then felt around for the uterine artery. Finding the uterine artery was the most difficult part of the operation. The hand in the vagina might assist, if necessary. It was not necessary to enucleate this artery; it might be tied *en masse* without danger. He would tie it well away from the cervix, because its distribution was by no means constant, the vessel corresponding to the superior vesical in the male being given off often at some distance from the uterus. He would tie the vessel, therefore, at least three-quarters of an inch away from the cervico-vaginal junction. He would then dissect down as far as the vagina upon the lateral aspects of the uterus, encroaching well upon the uterine tissue anterior to beyond the line of the uterine artery. He passed down behind to a point corresponding to the base of the uterus. In some cases there might be hemorrhage at this stage, necessitating ligature of the utero-sacral ligament, which might be done *en masse*. In some cases there was oozing from the stump, due to anastomosis from the bladder through the vagina. This could be controlled by free application of the Paquelin cautery or by packing. This was a contingency, however, which he had himself escaped.

In the cases where a pedicle was readily formed the method of Dr. Kelly, or still better that of Dr. Byford, might be applied. The latter, or possibly some modification of it, presented, he thought, the ideal operation in these cases. It was impossible to disinfect the cervix so as to make it a safe thing to leave in the cavity of the peritoneum.

DR. DUDLEY, of Chicago, considered that Dr. Byford's method fulfilled the surgical conditions perfectly. He had treated two cases recently by it, and had had surprisingly few bad symptoms. The operation leaves the pelvic cavity almost clear. He had made a slight addition to the method in both cases. This consisted in introducing into the vagina a square of iodoform gauze and packing it with strips of the same. This tampon served admirably for serous drainage and might be left in for a long time. In one case he had left it in for five days.

DR. SKENE was interested in the discussion, but considered Dr. Byford's method restricted to a small class of cases, and one which was daily becoming more limited. Further, when the operator had gone so far as to open the vagina and bring the stump down, he saw no reason why he should not go a step further and remove the cervix altogether. He suggested, however, dilatation and inversion of the cervix, which would

fill the indications without wounding the vagina at all. This had been done, and he would suspend judgment until he knew how Dr. Byford's method compared with (1) complete removal and (2) dilatation and inversion.

DR. TABER JOHNSON, of Washington, had done supravaginal hysterectomy in nine cases. His first four cases had died. He had subsequently obtained instruction from Bantock, and had operated upon the last five cases according to Bantock's method. All had recovered. The tumor in one case had weighed as much as twenty pounds. The method had been successful in the hands of Bantock, and he could refer to a prominent operator in Philadelphia who had done twenty-seven hysterectomies within a year by this method without the loss of a case. Extensive and convincing evidence would have to be furnished, were the operation to be amended after successes such as these and the successes of Keith before he abandoned the operation in favor of the electrical treatment. The prominent features of Bantock's method were the serreneud, the sewing the peritoneum to the stump under the clamp, and the treatment of the stump outside of the abdomen. The argument that this treatment of the stump was unsurgical could have no weight in the face of the fact that the patients recovered. It was better for the patient to get well, even if it took eight weeks, than for her not to get well at all under a modified treatment.

He agreed with Dr. Skene in thinking that if the vaginal roof were to be opened it might be as well to get rid of the infecting stump altogether.

DR. DUDLEY had tried inversion after dilatation, and found it exceedingly difficult. The entire removal of the stump was also difficult and dangerous. He thought Dr. Byford's method applicable even to the last class of cases to which reference was made by Dr. Kelly and Dr. Polk. The size of the stump was reduced by the application of the Paquelin, and a hole could be safely made in the anterior vaginal wall sufficient to accommodate a pretty large stump.

DR. GEORGE KEITH begged to correct a statement made by one of the preceding speakers. His father had not abandoned hysterectomy. He had the previous week had a letter from his father stating that he had recently removed a fibroid by hysterectomy. He simply gave patients the chance of benefit by electricity before deciding upon operation.

DR. POLK rose to thank Dr. George Keith for this explanation. The report that Dr. Keith had abandoned the operation had, he confessed, "staggered" him, but this explanation put the matter upon a different basis.

He could say that he had tried all the methods suggested: he had removed the whole uterus twice. The procedure ad-

vocated by Dr. Byford had been, if he were not mistaken, suggested by a German operator in a modified form since, or even before, Dr. Byford's first operation. The procedure certainly simplified the operation, shortened it, and that was a great deal in all capital operations.

DR. KELLY had devised a corrugated uterine sound to assist in finding the relations of the uterine artery in some cases where the tumor was anterior and the uterine body was up behind and not easy to get at. From studies in the dead-house he had decided to tie the ovarian arteries in the abdomen, and where he could not get at the uterine arteries he would temporarily compress the abdominal aorta. The serrenend was not original with Bantock. Neither Bantock's nor any other method would be applicable to all of this difficult class of cases.

DR. TEMPLE would not interfere with a tumor which gave no symptoms. In the matter of operation Dr. Byford's plan rather commended itself to him. He saw no objection, however, to the removal of the whole of the uterus. The inversion of the cervix he could understand to be a difficult operation.

DR. BYFORD closed the discussion. Where the growth extended beyond the ovaries he tied these off, tying everything off down to the point where he made his pedicle. In regard to the complication of the technique of the operation, when the fingers were brought together below the stump there was only the vaginal wall between them. With the hemostatic forceps he then jabbed down and opened into the vagina, snipping forward and to each side, making a triangular opening which would accommodate quite a large stump. Three-fourths of the cases operated upon had had developments in the broad ligaments, and in most of them the tumor was large. In one case there was practically no pedicle, and the tumor was as wide as the pelvis would admit.

Referring to the other methods of treating the stump from below, he would say that he had once been enthusiastic about the removal of the whole cervix, and had invented a pair of forceps for the purpose. He had found the operation, however, difficult; you do not close off the peritoneal cavity, and you remove the keystone of the pelvic roof. In regard to the objection that the retention of a sloughing pedicle was unsurgical, he would say that, in his opinion, whatever cured the patient was both scientific and surgical.

The president, DR. JOHN P. REYNOLDS, then delivered the annual address, the subject of which was

MARRIAGE,

with especial reference to the "advanced woman." He conceded that great improvements were to be expected in the

women of the near future. He believed that woman might develop physically so as to be, in her way, quite as strong as man was in his. He believed that in the more hygienic styles of dressing she might be emancipated from an important source of weakness, while mentally she might advance so as to be really the intellectual equal of man. In spite of these concessions, however, he yet held that woman could not compete with man in any department of bodily or mental labor unless childbirth were excluded, or at least so limited as practically not to exist. Referring to recent magazine articles, advocates of social reform had said that the "advanced woman" would have only so many children as she chose to have, and only when she chose to have them, the inference being that the number would be small. The author of the paper did not believe in the limitation of the family, except, of course, in the cases of the insane, diseased, and criminal. He held the opinion that marriage implied child-bearing, that it implied even a large number of children where the parents were young and vigorous. Large families were beneficial to their individual members and to the state. Divorce had in the restriction of child-bearing its most effective cause. Each additional birth was a fresh guarantee against its occurrence. Parents occupied with the wants of a large family had no time for divorce. He did not undervalue, then, the higher education of woman, but this education should be such as was consistent with motherhood, and such as would assist her in the training of her offspring.

On the other hand, motherhood demanded peculiar consideration. The sufferings of labor should be mitigated. He recommended anesthesia wherever there was intolerance of pain. Nothing was more unfounded than the general fear of anesthesia in labor. Even hospital patients had a right to demand it for the increased safety which its administration insured, as well as from a humanitarian standpoint.

The physician should keep the puerperal woman under observation for at least an hour and a half after labor. He should also interdict the night nursing of the child; night nursing was, after the first few weeks, unnecessary and especially exhausting to the mother.

DR. WILSON agreed with these sentiments most heartily, and proposed a vote of thanks to the president, on behalf of the Society, for his choice of a subject and the able manner in which he had voiced the opinions of the members of the Society.

DR. SKENE begged to second this motion. It was most desirable that a little of the psychology of the specialty represented by the Society should be now and then brought before it.

The motion was carried, and the thanks of the Society were presented to the president by Dr. Polk.

DR. SKENE read a paper entitled

INJURIES OF THE URETERS DURING LABOR.

The cases usually were found in primiparæ, or, if in a multipara, after a tedious labor. The patient would appear to progress favorably for a time, the lochia and the milk would be normal, when there might be some retention of urine, and pain in the lower part of the abdomen would be complained of. There would be tenderness to the touch, slight at first, but increasing in severity, and the temperature would be found more or less elevated. In from three to five days these symptoms would decline after a discharge of pus and perhaps blood. There might also be casts in the urine. The bleeding subsides in the course of a day or so, but the discharge of pus will continue for a week or more. The most of the cases recover, but some terminate in acute disease of the kidney which ends fatally. The evidence obtained by the vagina in these cases is negative or there is tenderness high up. The diagnosis is made largely by the exclusion of metritis, peritonitis, and cellulitis. The condition was illustrated by the following case: A woman died suddenly two weeks after labor with convulsions and without any clear history. There was found injury of the left ureter one and one-half inches above its entrance into the bladder. Suppuration had begun at the site of the injury in the ureter; while above, the ureter was dilated and filled with pus and blood. There was acute nephritis of that side. In other cases where death had resulted from acute nephritis he recalled that one kidney was more affected than the other. It seemed to him probable that in these cases there had been contusion of the ureter by the head of the child, the hand of the obstetrician, or more often by the forceps. Pathologists always examined the kidneys in these cases, but seldom or never the ureters. The relief of the symptoms occurred when the force above overcame the swelling and occlusion. We might have the ureters obstructed from pelvic inflammation, also from neoplasms. The desirability of examining the ureters in death with uremic symptoms was apparent.

The predisposing causes of injury of the ureters during labor were found in a low position of the bladder and ureters and an impaired nutrition of these organs. Where the membranes ruptured before dilatation was complete the cervix was carried down and the bladder with it. Lateral motion of the forceps might injure the ureters. The treatment was mainly symptomatic. Rest in the recumbent position

was imperative, and the hot vaginal douche might be advantageously employed. For prophylaxis full dilatation should be obtained before rupture. The bladder and ureters should be supported, especially where forceps were used. Free cathartics acted beneficially, and, where the bladder was involved, washing out the bladder gave much relief. The indications were to relieve pain and to sustain the patient, holding in reserve the question of surgical interference. With the use of the catheter for injecting the ureter he had no experience, and doubted whether we could safely employ such treatment, although in the hands of experts it might possibly do good.

SECOND DAY—AFTERNOON SESSION.

Discussion of Ureteral Disease following Labor.

DR. JAGGARD, of Chicago, stated that anatomical frozen sections made from cases of death during labor had shown the bladder, often in the first stage and generally in the second, retracted so as to constitute it an abdominal viscus. He thought that the ureters might be injured in their nutrition during pregnancy, but rather by increased abdominal tension than by direct pressure. Then there were cases in which ureteral calculi were the cause of the dilatation. Two such cases had been demonstrated by Dr. Byford. He had himself had two cases in which ureteral calculi had been the probable cause of the dilatation. He considered the use of the ureteral catheter hazardous in the puerperal condition, and, further, it was not required, the urine and palpation of the ureters giving all the information which was required.

DR. JOHNSTON referred to two cases of ureteral disease, in one of which the condition proved fatal. The case was that of a large multilocular cyst, in which the patient, forty-eight hours after the operation, developed a furious mania. The patient died, and by autopsy purulent inflammation of the ureter was found where the tumor had rested upon it at the pelvic brim. Above it was dilated, while from there down to the bladder it was all right. The other kidney was normal.

The other case was one with the constitutional symptoms of general tuberculosis, but, except for an obstinate cystitis, without physical signs. The lungs were clear. Upon autopsy the bladder, ureters, and pelves of the kidneys were found tubercular.

DR. KELLY desired to be put upon record as having first brought an ureteral catheter to this country, and as having been the first in this country to catheterize the ureter.

Dr. BYFORD believed that the subject of ureteral disease was bound to be developed with the separation of ureteral from diseases of the neighboring organs. Many of the subjects of uterine cancer died with uremic symptoms, in a large proportion of the cases due to occlusion of the ureter. The subject of ureteral catheterization would be, he had no doubt, also largely developed.

Dr. SKENE closed the discussion. It had not been his intention to include the relations of diseases of the ureters to other pelvic diseases. He had simply intended to add a new factor to those already known. With Dr. Jaggard he recognized the possibility of altered nutrition in the ureter during pregnancy. There were, however, he was assured, cases of ureters which sustain injury during labor, although previously in a perfectly normal condition.

Dr. DAVENPORT presented the history of a case of

ANOMALOUSLY LOCATED URETER; OPERATION; CURE.

The case was that of a woman of 29 years, the mother of three children. She had presented herself December 11th, 1889. She had suffered from incontinence of urine all her life, always having been debarred from society on account of this constant leaking which went on both day and night. There was no difference in the flow at different parts of the day, so far as the patient could tell, but that upon different days was apt to be quite different. On one day she might require but two or three napkins, while upon another seven or eight would be used. In addition to the leakage she passed urine at normal intervals. After trying all the remedies for incontinence, he had noticed a thickening of the anterior vaginal wall, forming a ridge about two inches in length. At this time the urine was observed slowly dripping from the meatus, but not from the urethra. A papilla seemed to give it exit. A probe was passed into the papilla, demonstrating a malformation of the ureter, which did not open into the bladder at all. The urethra was dissected up from the anterior vaginal wall and turned into the bladder. A second operation was required to close a vesical fistula which remained. The last operation was a success. A case had been reported by W. H. Whitney: one by W. H. Baker in 1878. Dr. Emmet had reported a case in which the ureter ended in the upper part of the vagina. Dr. Massari, in the *Wien. Med. Wochenschr.*, 1879, had reported two similar cases.

Dr. BAKER had had a urinary calculus form about one stitch as a nucleus. He had himself chosen catgut, but would, if operating for another similar case, omit stitches in the bladder altogether.

DR. BYFORD could report another case of the ureter opening into the vagina. The case was reported by Dr. Ellen MacArthur before the Illinois State Medical Association. She had operated successfully.

DR. KELLY read abstracts from a paper entitled

CEPHALHEMATOMA.

The formation was found in one in two hundred and fifty children. It may result in marked deformity, and even in retrograde changes which threaten the life of the child. It consists in an effusion of blood between the pericranium and the flat bones of the skull. The tumor rarely crosses the line of sutures. The head has a lopsided appearance, the elevation being one-half to one inch. Fluctuation is well marked; the color of the skin over the tumor is unchanged. In the course of a few days a bony ridge grows up about the circumference of the tumor, which in the course of ten days or two weeks diminishes in size, the covering taking on a parchment-like feel, the pericranium going on to form bone which projects from the periphery towards the centre. A villous layer forms in the course of a few days over the bone. Very rarely suppuration and necrosis of the bone follow. The natural tendency of the disease is toward cure. The defect is, as a rule, filled in, and there is no resulting deformity. It may, however, form a boss on the head.

This condition was to be distinguished from *caput succedaneum* and from *hernia cerebri*. *Caput succedaneum* was formed during birth and was located upon the part presenting. *Cephalhematoma* was found more commonly after easy labors, and seldom upon the side of the head presenting, the preference being for the right side. The one was a doughy tumor, and the other was surrounded by a sharp, elevated ridge of bone at the periphery, conveying an impression of absence of bone from the middle portion. *Hernia* was found in the line of the sutures except in rare cases; it was affected by respiration, reduced by pressure, etc.

If, in the course of two or three weeks, there were no diminution in the size of the tumor, it should be punctured and a compress applied, bringing the pericranium into close contact with the bone.

The tumor had been supposed to have a medico-legal value as a mark of injury. Although hemorrhagic, however, it could not be construed as an evidence of injury.

Historically the subject was very rich. The reader had obtained one hundred and twenty-five references to important papers written during the early part of this century and before. But trifling notice had, however, been given to it in

English, the earliest paper he had obtained having been written in 1754 by one R. B.

DR. JAGGARD found this not an infrequent condition, occurring to a slight degree in a large proportion of labors. Of greater importance was the internal variety formed upon the internal surface between the pericranium and the bone. This was difficult of diagnosis and impossible to cure. Dr. Part-ridge and Dr. Keating had reported cases of the internal variety. He would criticise the statement that the condition did not depend upon the conditions of labor. In almost all normal labors there was slight periosteal hemorrhage from the shoving or slipping of the bones of the head, while after the traumatism of the forceps it was almost universal.

DR. JENCKS mentioned that Bouchut's work on the "Diseases of Children," translated into English in 1868, described this condition, mentioning particularly the bony ridge.

DR. POLK stated that Dr. Geo. Elliot, of New York, had reported several cases. He recalled the subject as one which used to strike terror to all hearts in his student days.

DR. FREDERICKS, upon request, presented the histories of two cases which he had seen during the last eight or ten years. The first case he had seen January 29th, 1882, male child, head in the vertex position, the right occiput presenting. The second stage was prolonged, but the pains were rapid; the head rotated and was born in the second position without forceps. The next day the child suffered with convulsions, and a tumor was found upon the left side near the edge of the sagittal and lambdoid sutures. It became progressively larger, so that in the course of twenty four hours it covered a large part of the parietal bone. The convulsions recurred, and on February 2d the child died. On autopsy the pericranium was found lifted from the left parietal bone, while between the dura and the right parietal bone an internal hematoma was found.

February 22d of the present year he had seen the second case. This was that of a male child weighing eight pounds. The labor was long and difficult; the first stage was protracted by a rigid os. There were severe expulsive pains. The head was in the first position and was delivered by short forceps. On the right parietal eminence was a small tumor, which, when first seen, presented the bony ridge, and which spread all over the parietal bone down to the frontal protuberance, where it commenced to discharge from a cut by the forceps. A compress was used to prevent loss of blood, and the tumor continued to spread over the temporal bone into the orbits, and finally over the whole head. The child died February 26th, at the end of four days.

Curiously enough, the speaker had attended, upon Febru-

ary 22d, another case of labor in which the child had presented a tumor upon the right parietal bone one-half the size of a silver dollar, with clearly defined edges and a blue discoloration. In six weeks this had subsided, leaving only a slight thickening of the periosteum to mark its site.

DR. KELLY closed the discussion. Traumatism could not be considered the basis of this condition, as it did not, as a rule, follow the use of the forceps, or severe labors, but oftener simple and easy labors. It had been found even before birth upon the child delivered by Cesarean section, and even upon the fetus of five and six months. Its etiology was not understood. Bouchut's work would be found in his bibliography of the subject. Other cases had been reported where, as in Dr. Fredericks' case, the effusion passed through the meninges and a communication between an internal and external hematoma was established.

DR. ASHEY, of Buffalo, read a paper entitled

DRAINAGE AFTER LAPARATOMY,

advocating the use of the tube. He had never had ventral hernia after its use. He syringed the tube out every four or six hours, and removed it in twelve, thirty-six, or forty-eight hours. After removing the glass tube he put in a rubber drainage tube or a glass stem to prevent closure.

DR. ROBB found the subject one of great practical interest. The drainage tube had been one of the most important factors in raising laparotomy to its present status. Koeberle, of Strassburg, deserved the credit of originating the glass drainage tube now so commonly used. Koeberle's tube, with slight modifications, was still the best. Lampwick or gauze twisted and passed through the tube formed good capillary drainage. The tube did not need cleansing very frequently—not oftener than once in twelve or twenty-four hours. The outside dressing should be removed as soon as saturated by the discharge. The hands and instruments used in cleansing the tube should be as thoroughly aseptic as though employed in the operation itself. The forceps devised by Dr. Kelly—a slender forceps—could be used. A ball of sterilized cotton was passed down to the bottom of the tube into the pelvis; this was a better method than the suction of the syringe. He would rotate the tube after cleansing. Where the omentum was caught in the holes it was necessary to lift the tube high enough to put a ligature around the loops. Where the intestine was caught it could be released by the gauze forceps. For dusting the tube he used a powder composed of one part of iodoform to seven parts of boric acid. Then he plugged the tube with

sterilized gauze, and applied bichloridized cotton around and over the mouth.

The tube could be removed when the discharge no longer wet the plug. This might be as early as twenty-four hours. The earlier the tube was removed the less the danger of ventral hernia. If the pulse were, however, 120, and the temperature over 100°, it was better not to remove the tube, even though the discharge had ceased. After removal the tract could be kept open by a piece of twisted gauze. In a profuse purulent discharge the tube need not be removed for from one to two weeks. At the time of the operation one or two provisional sutures were inserted at the site of the tube, and were left loose until its removal. In considering the question whether the patient were better off with or without the tube, it should be borne in mind that the matter of cleansing was most important, and that it should be the care of the surgeon or some one equally skilled. He had himself used the tube in fifty cases without any unfortunate symptoms.

DR. DUDLEY, of Chicago, stated that he had used the drainage tube in two cases, and both had died. One was a case of operation for a large fibroid. Not more than two drachms had been discharged from the tube, and it had been removed at the end of twenty-four hours. The patient had died on the eighth day from an abscess of the omentum beneath the stomach. The second had died from intestinal obstruction from the adhesions. He had since done 19 laparatomies: 8 hysterectomies, 1 Cesarean section, 2 for ruptured extra-uterine pregnancy, 5 for pyo-salpinx with rupture, and 3 for double intestinal fistula. He had treated all of these cases without a tube, and had not had one death. He did not believe in the drainage tube. There was danger of hernia following its use; there was danger of intestinal fistula from pressure. Further, a lymph canal was formed about the tube in the course of a few hours, cutting off the cavity, so that it became practically worthless.

The speaker used special care in the toilet of the peritoneum. In the case of rupture of a pyo-salpinx he did not sponge out the cavity, but washed it out with a stream of water. The use of the sponge was likely to infect the neighboring peritoneal surfaces.

The intestinal tract could be utilized for drainage. He gave a saline cathartic just before the operation, so as to obtain vermicular action immediately after. In a case of operation for intestinal fistula as large as the finger, he had given a scidlitz powder immediately after the operation. Another point he would criticise would be the use of silk ligatures. In the place of silk he used catgut. Even in hysterectomy he used catgut.

On motion by DR. MANN, it was voted that the discussion be resumed after the reading of the papers on Thursday.

THIRD DAY—MORNING SESSION.

DR. T. A. ASHEY read a paper entitled

REPORT OF A CASE OF LAPARATOMY FOR INTRAPELVIC
PAIN OF SIXTEEN YEARS' STANDING.

The paper advocated exploratory incision in cases of intra-pelvic pain where the diagnosis could not be arrived at by the ordinary means. He premised that in such a case therapeutic measures had been exhausted, the patient's usefulness was interfered with, and she was hopelessly incurable.

The case reported was that of an unmarried woman of 30 years, free from hysteria, and with mental faculties which triumphed over her physical disability. From the age of puberty she had never been free from pain in the left ovarian region, which from a dull aching was exaggerated to an agonizing pain at the menstrual periods. She was not able to bear the weight of her clothing or even of the hand upon the part. The patient was treated locally through the vagina, although there could be obtained no physical evidences of pelvic disease. She was treated constitutionally also, and her general health improved, but the pain did not at all diminish. The patient gladly consented to laparotomy, and on June 18th the ovaries and tubes were removed. There had been absolutely no return of the pain since the operation. August 24th the patient wrote: "You have given me a new life."

In this case the left ovary was found held as in a vise between two folds of the broad ligament. The ovary was small and studded with corpora lutea, some of them as large as the corpus luteum of pregnancy. It was evident that cicatrization had been retarded from interference with ovulation by the abnormal relation of the peritoneal folds. The patient was now in good physical health.

DR. KELLY rose to say that he could not condemn strongly enough the expression, "laparotomy for pain." Even the term *ovaralgia* was now about obsolete, the use of such a term arguing ignorance of pathological knowledge. He thought that even the finer distinctions in diagnosis should be made out by bimanual examination. The patient should be anesthetized, if necessary. If the uterus were pulled down with a tenaculum, the index finger in the vagina or rectum would get at the ovaries without trouble. The uterus could be pulled

to the vaginal outlet, and, with the other hand upon the abdominal wall, no difficulty should be encountered in diagnosing even the lesser conditions of disease. He could always get the ovary, except where atrophied or bound up with adhesions. It was his custom to follow the upper border of the uterus, and, after locating the tube, to pass his finger over the posterior surface of the broad ligament, when it would recognize a sharp, resisting band, which was the ovarian ligament. If this were then followed there would be no difficulty in locating the ovary. Even if the diseased condition could not be made out, he thought years of treatment preferable to the operation, except, of course, where attacks of acute pelvic peritonitis supervened.

DR. DUDLEY, of New York, did not quite agree with Dr. Kelly. He had not understood that Dr. Ashby advocated laparotomy for pain, but for the condition which produced the pain. It was impossible always to diagnose conditions in the ovary, even with the bimanual touch, however great the skill. In such a case as that which Dr. Ashby had related, we owe it to ourselves and to the patient to perform laparotomy. The condition was an interesting one. There was scar tissue showing circulatory disturbances and subacute or chronic inflammation with minor adhesions. The disturbed circulation was the starting point of such a history. The ovarian veins were nine or ten inches long and had no valves. The circulation was especially liable to obstruction upon the left side. Disease was also more frequent upon the left side. The ovarian vein was there pressed upon by the sigmoid flexure, and it opened into the renal vein, also without a valve. A few years ago he had reported four cases of varicocele in the female. Since then similar cases had been reported by Skene, Lusk, Polk, Nilsen, and Currier. The veins of the pelvis were enormously dilated, there were osmosis, subacute inflammation, and adhesions.

In Dr. Ashby's case the adhesions so surrounded the ovary that it was fixed; it would have been impossible to release it by any form of manipulation or massage. Such cases must have laparotomy. He did not say that the ovary should always be removed. In three cases of his own he had used palliative treatment—in one case, four years; in another, two years; and in another, six months. Not relieving the symptoms, he had done laparotomy, had broken up the adhesions, had transfixed the ovaries, had opened ten or twelve cysts in each and then returned them to the cavity. The first case had been operated upon last December, and the last two in April and May of the present year. All three operations were done for pain, and all were relieved from the date of the operation. Within a few days he had made a physical exam-

ination and had found the uterus in position, no adhesions about the ovaries, no pain upon touch, no pain connected with the performance of labor or other duties. So far as he knew the patient was perfectly well. He would be glad to hear from Dr. Polk.

Dr. POLK would make two points in connection with Dr. Ashby's paper and two in connection with Dr. Dudley's remarks. As he understood it, Dr. Ashby's paper advocated merely an exploratory incision. All were aware that a great deal had been said in regard to the freedom with which the abdomen was opened, and a great many ugly words had been used in regard to those who advocate this procedure. As he understood Dr. Ashby, he had intended merely to protest against such comments rather than to advance a new idea in surgery. With this view in mind he thought that we owed a vote of thanks to Dr. Ashby, and he thought that Dr. Kelly would, upon consideration, say the same thing.

It was extremely interesting, too, that since the days of appendicitis abdomen-opening had been extending its range, so that the members of our own sex are brought face to face with the fact that their intestines could be looked over. This had done more to upset the nonsense which had been talked about the exploratory incision than any other one thing. The gentlemen of the Gynecological Society owed, he thought, a monument to the male appendix.

Dr. Kelly had said that by rectal and vaginal touch he could always succeed in making out diseases of the ovary, if the patient were under anesthesia. This was the rule, of course, but Dr. Kelly would allow that there were exceptions. There were cases in which this method of examination was not sufficient. The most dexterous man, with the most delicate and instructed touch, could not make out some of these conditions. He had had a case in his ward of this persistent pelvic pain. The patient had been seen by a number of physicians, and the most of them had considered the pain due to malaria. Physical examination could detect no cause. Upon opening the abdomen, however, the pelvic organs, including the omentum and intestines, were found united and bound down by a mass of loose adhesions. The pain was apparently not dependent upon anything but the adhesions. To have attempted to relieve the condition it would have been necessary to release coil of intestine from coil of intestine. The abdomen was simply reclosed.

It was gratifying to be able to report work along a different line than amputation. As Dr. Dudley had suggested, we have now reached the stage of partial extirpation rather than amputation. It is just as easy to make an exploratory incision in the ovary as into the cavity of the abdomen. He had

himself laid the ovary open like an apple or a kidney to the hilum, and had later sewed it up and put it back, and the woman had suffered no discomfort from the treatment. One case does not establish a principle, but it can open a door which may lead to something besides amputation in all cases. Such work had been done by Martin, of Berlin, who had amputated the infundibulum of the tube, and had then returned the patent tube and the sound ovary to the cavity of the pelvis. It was our duty to keep as much of the ovarian structure in the pelvis as was compatible with the health and usefulness of the woman.

In the beginning men had opened the abdomen and removed all that they could apparently lay their hands upon. This was all now changed. Catarrhal salpingitis does not justify amputation. Mere adhesions binding down the tube and ovary do not justify amputation, and he trusted that in some lines further conservatism would be developed.

DR. BYFORD said that from the propositions which had been advanced he would infer that, having exhausted all other treatment, we must take out the ovary for persistent ovarian pain. He recalled a case similar to that of Dr. Ashby. There was retroversion, and Alexander's operation was resorted to, but this also failed to give relief. Finally the patient had asked him either to kill or to cure her, and he had made an exploratory incision. He had found slightly cystic ovaries with cicatrices, and had removed them. The woman was 34 years of age, and her mind had become affected, justifying, in his opinion, this last resort for cure. She was still, however, no better; in fact, her mental condition was worse. He would add his protest or caution against expecting too much even from the operation in these cases.

In regard to exploratory incisions in the ovary, he would say that where he touched the ovary with the knife or suture he expected the formation of adhesions. He thought that if we touched the ovary at all we had better take it out. He had no objection to the use of the needle, but he would not leave a suture in the ovary unless for a disease which was worse than the resulting condition. He agreed that amputation was not required for salpingitis nor for adhesions, and his remarks in regard to the ovary were simply directed to the desirability of subjecting it to as little traumatism as possible.

DR. MANN felt that the question of the removal of the ovaries for pelvic pain was a difficult one to decide. There were cases which puzzle all of us. We could not in all cases make an accurate diagnosis of the condition of the ovary before opening the abdomen. We would find then conditions which we had not suspected even under ether. Upon that ground he commended Dr. Ashby's paper. The exploratory incision

was a good thing in that it cleared up conditions which could not have been otherwise made out. He would ask, however, whether, even after the abdomen had been opened and we had discovered that there was no gross lesion, no diseased tube or enlarged ovary—after we had cut open the ovary even—we could be certain that we had recognized all possible sources of disease? It had been suggested that disease of the ovary only recognizable by the microscope may exist and cause pain. We may then open the abdomen and be no wiser than before, and the patient no better, if our object is to diagnose disease of the ovary, without removal.

The other objection to exploratory incisions of the ovary had been suggested by Dr. Byford. We could not sew up the ovary without resulting adhesions to the neighboring organs. It might be tried, but he had not himself much hope of help in that direction. In many cases he believed that the abdomen was opened where the trouble was not in the ovaries or tubes, but in the ureters. He believed that disease of the ureters was common. They became enlarged, tender, and were relieved by a definite line of treatment. He recalled a case in which the woman had been examined by two or three men with a view to laparotomy. He had found the ureters tender, so that the woman had shrieked when they were touched. Treatment directed toward this condition gave relief.

Dr. POLK inquired as to the nature of the disease which defied the ordinary methods of examination.

Dr. MANN replied that he had referred to the disease described recently by Dr. Mary Dixon Jones, of Brooklyn, under the title, "A Hitherto Undiscovered Disease of the Ovary."

Dr. TABER JOHNSON had not had Dr. Polk's results from laparotomy where the ovaries were treated but not removed. He had done one hundred laparotomies, and in a number of these cases he had broken up the adhesions only, or had at the most removed one ovary, but in all such cases the patient had returned in the course of six months worse than before the operation, the condition being, as a rule, so bad as to necessitate a second operation. He saw no advantages in the mere breaking up of adhesions. You left raw surfaces which would unite with perhaps shorter bands and closer relations of the parts. Both Thomas and Goodell removed the second ovary if there were the slightest suspicion that it was diseased. It was better, he thought, to have the ovary out rather than to run the risk of invalidism and a second operation.

Dr. POLK replied that unquestionably the second ovary should be removed where there were any evidences of degeneration. In this position he quite agreed with the previous speaker. There were, however, ovaries which contained only

one or two good-sized cysts. These could be opened and the resulting adhesions would amount to little. It was not necessary to use sutures in such cases. He had used a suture in his own case to control hemorrhage from the cut ovarian vein.

DR. ASHBY closed the discussion.

DR. JENCKS read a paper entitled

RESEMBLANCE OF SOME FORMS OF BENIGN TO MALIGNANT
DISEASE.

One case was that of hemorrhage, ichorous discharge, constitutional infection, and excoriated external parts. The condition simulated cancer. A sponge was found in the vagina, having been used as a pessary and forgotten. Cases of ovarian tumor associated with uterine hemorrhage often had the history of malignant disease.

DR. POLK characterized the class of cases as most important and interesting in connection with the question of hysterectomy for cancer, and in connection with the ovary as forming an indication for the abdominal exploratory incision.

DR. DUDLEY, of New York, recalled his first laparotomy, done in Boston. He had had the best man in Boston as consultant, and it had been impossible to say whether the growth were benignant or malign. Operation was done, and a tumor apparently benign was found. There were no adhesions and the pedicle was long and small, requiring simply a catgut ligature. The cyst, however, had burst, and a quantity of the fluid had escaped into the pelvic cavity. This probably contained cells of a semi-malignant character, which, grafted on the congested peritoneum, produced a malignant growth. Five months after the operation the woman died of sarcoma springing from behind the uterus and extending over to the other side. Of the intra-abdominal tumors the malignant varieties were most all of rapid growth, associated with ascites, and occurred about the menopause. In the case of intra-uterine growths, even with very alarming symptoms, the condition may be benign. He recalled a case, that of the mother of twelve children, who had been treated for a long time for cancer of the uterus; she had been given up to die, and would have died of septicemia. She had every gross evidence of malignant disease of the cervix. On examination, however, it was shown that an intra-uterine growth, a pedunculated fibroid, had been expressed into the cervix and killed by pressure. Sloughing had resulted in septicemia. It was easy to make mistakes between a benign and a malignant growth, unless a careful examination was made.

DR. MYNTER had eight years ago been consulted by a woman 45 or 50 years old for an abdominal tumor. There was ascites, but the tumor was growing slowly and the woman was not emaciated. He had supposed it a fibro cystic tumor of the womb, and the consulting surgeon had agreed with him and had opened the abdomen to perform hysterectomy, when the condition proved to be cancer of the omentum.

DR. H. T. HANKS, of New York, sent a paper entitled

MY RECENT EXPERIENCE IN RESTORING LACERATIONS INVOLVING
THE SPHINCTER ANI BY THE FLAP-SPLITTING METHOD.

Read by Dr. Dudley, of New York.

From an experience of four years with this method the author of the paper is convinced that it is the most simple,

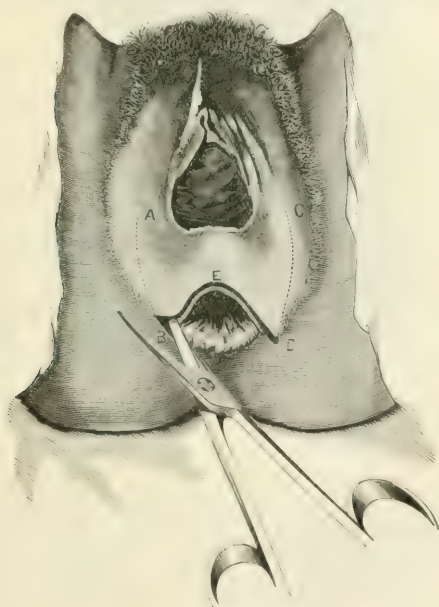


FIG. 1.—Showing position and extent of incision.

most expeditious, and most safe in its results. When the sphincter is involved he does not do the operation in seven

or ten minutes, and he would not advise such haste. No man has a right to undertake any operation unless he is prepared to give it all of the time which it requires. He had seen Mr. Tait in his own hospital do a perineum in from five to seven minutes, but he thought that the operation would have been done better had he spent from twelve to fifteen minutes instead.

The patient is prepared in the usual way. When on the

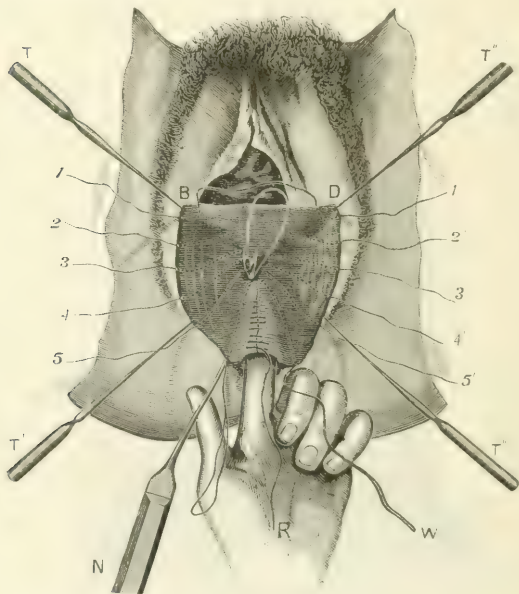


FIG. 2.—Showing manner of introduction of sutures.

table in the lithotomy position, the vagina and rectum are douché with a bichloride solution, 1:4,000. The upper rectum is then plugged with antiseptic cotton wrung out of hot water, the whole being attached to a string so as to be easily withdrawn. Having by approximating the parts located the position of the tear, you determine the length and the depth of the proposed incisions. To avoid delay from the bleeding from the perpendicular cuts, first make the transverse incision near to but below the end of the torn sphincter,

commencing on the patient's left. Then cut or split the rectum from the vagina up to the angle of the tear in the recto-vaginal septum, carrying it a half-inch higher. This half-inch is of great value in strengthening the result at this point, as it gives a full inch with which to repair this portion of the lesion. These slits can be made with almost any scissors or scalpel with which one is in the habit of working. The parts are now irrigated with hot water and then the vertical incisions are made. These should be one-quarter of an inch deep at their lower portion, but not so deep above.

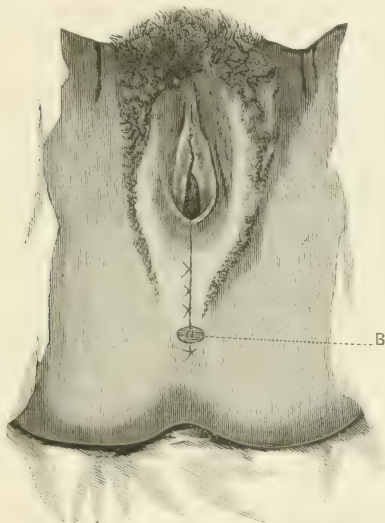


FIG. 2.—Appearance after the completion of operation.

The rectum is sewed up with a continuous catgut suture where it is involved for more than half an inch. The perineum is closed with silver, a fine needle being used especially for the lower sutures. For the upper sutures catgut is used. The ends of the silver wire are passed through a lead button. The bowels should be moved on the second day and should be kept soft.

DR. KELLY referred to Dr. Dudley's work in plastic surgery, and called for his opinion in regard to the flap-splitting operation.

DR. DUDLEY, of Chicago, had seen Tait perform this operation, and had admired the lightning-like speed with which it was done. He had operated by the method himself. In one case he had had a small fistula which impaired the result, and he did not think that in the majority of cases it restored the integrity of the perineum. We should try to restore the parts to the ante-partum position. It was necessary first to bring together the *carunculae myrtiliformes*, in order to correctly appreciate the object to be accomplished. He then proceeded to restore the perineal body. He had long since abandoned the practice of keeping the bowels confined for a week or ten days. At the end of thirty-six or forty-eight hours he gave a cathartic. No one method would suit all cases. He closed the rectal side with fine catgut sutures, and the remainder with silkworm gut rather than wire.

He would call attention to the fact that the size of the perineal body had little to do with its efficiency. All had seen cases of a bad tear leaving but a small perineal body, but this up under the pubes; and also cases with a large, subinvolted perineal body and no tear at all, but with the effect of a laceration of the perineum. It was not the size of the perineal body but its location which determined its usefulness. If up under the pubes, even a small perineal body would be sufficient.

DR. POLK suggested that the whole question turned upon the levator ani muscle, especially that portion which in the male formed the sling of the prostate. These fibres passed from the posterior face of the pubes backward, meeting at the side and at the back of the rectum. When the muscular tone was good they dragged forward the tissues to the position Dr. Dudley had characterized as "well up under the pubes." The posterior wall of the vagina became then so inclined as to catch the pelvic pressure.

DR. DUDLEY had four or five years ago, for convenience in operating, given the cut ends of his sutures, as fast as inserted, to an assistant to hold, in order to get them out of the way. He had soon found this a valuable feature in the result, and it was now his practice to add this to the technique of the operation. He inserted his sutures in the angle of the vagina, first upon one side and then upon the other. Formerly he had inserted all his sutures and then tied them all, not escaping a little antagonism between the adjacent sutures. Now he tied as inserted, beginning at the upper extremity or angle. Having tied the first suture, he grasped it with the lock forceps, which he gave to an assistant, directing him to make traction upward in the direction of the anterior vaginal wall. He then put in the suture below and brought that up, and the next and the next; proceeding finally to the other side, so that the restored angle of the hymen hugged the pubes in the

result. He had had more satisfaction from this one manœuvre than from any other one feature in connection with perineorrhaphy.

Discussion of Drainage after Laparotomy, continued.

DR. DUDLEY, of Chicago, restated his objections to the drainage tube, which answered its purpose only during the first few hours. His objections did not apply to drainage in general. There was no question as to the principle underlying the practice. Where we had material left which was likely to destroy the patient, we must make some effort for its removal. The only question was as to the means. It was his practice to use a packing of sterilized gauze, following the method devised by Mikulicz, of Vienna. He first lined the cavity with a square of gauze to the centre of which a string had been attached. This thread was tied, it was needless to say, upon its internal surface, and projected beyond the borders of the wound. Into the cavity thus lined he now packed strips of gauze, and finally covered the whole with the usual dressing. At the end of twenty-four hours the packing would commence to have a fetid smell. To remove it then would, however, court disaster by allowing the collapse of the wall of the cavity—a result which would subject the patient to all of the dangers to be dreaded from the tube. The gauze would collapse, and the adhesions by which the surrounding parts were quarantined would be broken, and the general peritoneal cavity would be invaded by the discharge. He would, therefore, keep the outside dressing dry, but would not remove the first packing for one week, and then he would remove the gauze only a little at a time. If necessary we may pack again at the end of the week, but never sooner. The handkerchief of gauze he removed only when traction on the string would bring it away with little or almost no force. It doesn't matter how long the square is left in. In one case he left it five weeks, in another six weeks. He frequently left it in for four weeks, but generally it was removed at the end of eight days or two weeks.

DR. TABER JOHNSON asked what he would use afterwards.

DR. DUDLEY replied that he used a rubber drainage tube, cutting it off as fast as it came up to the wound.

DR. JOHNSON asked whether, in case of a foul discharge, he washed out.

DR. DUDLEY replied that he was not likely to do this; the question was to his mind one of drainage. It made little difference how foul the discharge, if it had free exit.

DR. JOHNSON referred to the fact that in some cases a pint or a quart of serum or blood or foul-smelling discharge was

obtained by the tube. He asked whether this amount ever escaped by the method described.

DR. DUDLEY replied that capillary drainage was of all varieties the most perfect, the force seeming to act like that of a suction pump in removing everything which collected.

DR. MAXN considered the drainage tube capable of great harm. He felt, not easy, but rather uneasy, as to his result when one was inserted, and thought that he used it now in scarcely ten per cent of his cases. It had been the rule, "When in doubt, drain." He would instead say, When in doubt, wait, unless the patient is suffering from shock and it is imperative to get her off the operating table. He would use hot-water irrigations, make pressure, and in every way assure against hemorrhage, giving ten or fifteen minutes to the purpose, if necessary, and then close the abdomen. It was his practice to utilize the intestinal tract for drainage. He literally starved his patients for the first twenty-four or thirty-six hours, giving them only a little water to wet the lips. Where the system was deprived of fluids there was a great call upon the lymphatics, and he thought by utilizing this fact we could in the majority of cases get along without any other drainage.

TRANSACTIONS OF THE TENTH INTERNATIONAL MEDICAL CONGRESS, AT BERLIN, 1890.

SECTION FOR OBSTETRICS AND GYNECOLOGY.

(Specially reported for this JOURNAL by DR. A. CZEMPIN, of Berlin.)

SIXTH SESSION, CONCLUDED.

DRAINAGE IN LAPARATOMY—DISCUSSION CONTINUED.

BANTOCK (London).—The objection which has been raised against drainage, that it affords entrance to pathogenic germs into the abdominal cavity, is unfounded. The tube remains in use for from two to three weeks, until recovery is complete.

ROBERTS (Manchester) likewise confirmed the favorable effect of drainage. He has employed it also in a case of sarcoma of the kidney and in operations for other malignant

tumors. The result was very good. Drainage can also find application in tuberculosis of the abdomen.

BOLDT (New York) reported a case of a patient married ten years and delivered in the ninth year. She had pains in the left ovarian region. The left ovary and tube were considerably enlarged, and peritonitis set in. Abdominal section was performed and a quantity of bloody serous fluid was removed, and 200 gm. of coagulated blood evacuated from Douglas' pouch. The patient recovered without any incident. He believed that in a great many cases in which drainage is now employed, and in which it can be assumed that no infection has occurred and that the operation *per se* has been entirely aseptic, the introduction of a drainage tube is altogether superfluous. On the other hand, there are numerous cases, especially like those reported by Saenger and Tait—particularly pyo-salpinx, in which the adhesions are firm and the operation must be completed rapidly—where drainage would do much good. He thought that many cases which otherwise would be irretrievably lost could be saved by drainage. The tube can be replaced by a double canula, so that the secretions may be removed by irrigation rather than by siphoning. After forty-eight hours the drainage tube is worthless.

SEVENTH SESSION, AUGUST 7TH, 8 A.M.

PROF. PASQUALE *in the Chair*.

MARCY (Boston) read a paper entitled

PLASTIC SURGERY OF THE PELVIC STRUCTURES IN WOMEN.

He exhibited a number of instruments used by him in plastic operations, such as needle holders, needles, and kangaroo tendon which he employs in place of catgut.

SINCLAIR (Manchester) and EDEBOHLS (New York) spoke of the Alexander-Adams operation and the results obtained with it.

AUVARD (Paris) exhibited an

EMBRYOTOME

devised by him, which unites the qualities of the cranioclast and cephalotribe. A central arm with screw point serves as perforator. A second blade is then inserted laterally and acts as a cranioclast, being applied from without to the skull like the forceps. Should these two blades prove insufficient, a third blade is applied to the head from the other side, so that the two together act as a cephalotribe. The locking of the three blades is quite simple.

DUEHRSEN (Berlin) read a paper on

OPERATIONS ON THE INFRAVAGINAL CERVIX.

After amputation of the infravaginal cervix he had frequently observed the development of parametritis and posterior perimetritis, and these conditions, in his opinion, were due to the fact that the sutures applied included the retro-uterine connective tissue and even the peritoneum. A further cause is the peculiar relationship of the connective tissue, which is easily severed during amputation because it reaches close to the infravaginal cervix. Being thus divided, it retracts, as does the vaginal vault, and infection of the wound is also liable to occur.

For this reason Duehrssen closes the wound in the depth first by a catgut suture, and in two cases he has closed the wound, not from before backward, but from left to right.

In chronic metritis Duehrssen prefers curetting followed by local treatment to amputation; for cervical laceration he recommends Emmet's operation; for stenosis of the os uteri he advises discission with circular hemming of the wound; in stenosis of the entire cervical canal he uses dilatation aided by Apostoli's procedure.

FEHLING (Basle) read a paper on

THE NATURE AND TREATMENT OF OSTEOMALACIA.

Puerperal osteomalacia has furnished an unfavorable prognosis until recently. Thus far Fehling has performed castration nine times for this disease. The ages of the patients ranged from 28 to 51 years. One case died in consequence of the operation. In the remaining eight cases the disease had lasted up to thirteen years. All the patients were multiparæ, having given birth to from four to ten children. The examination for microbes gave negative results; but in all cases a diminished alkalinity of the blood was clearly recognizable, the degree being proportionate to the gravity of the cases. The principle of the operation was not to render the women sterile—an object attained by others by the Porro operation alone—but the abolition of the function of the ovaries, for Fehling's observations had shown that menstruation always made the condition worse. In the extirpated uterine appendages Fehling invariably found venous and arterial hyperemia. One notable fact in this disease was that the fertility of the women was materially increased while it continued. All the operated cases, thus far, show great improvement in the disease.

EIGHTH SESSION, AUGUST 7TH, 11 A.M.

PROF. KUESTNER (*Göttingen*) in the Chair.

PAWLIK (Vienna) presented a patient in connection with the report of a case of

TOTAL EXTIRPATION OF THE BLADDER.

The patient, æt. 40, began to suffer, in June, 1888, from hematuria, the cause of which was a pedunculated papilloma of the bladder, which Pawlik removed after making an artificial vesico-vaginal fistula. A year later very numerous relapses occurred, which were malignant in character and therefore required a radical operation. In order to be able to remove the entire bladder Pawlik proceeded as follows: He first conducted the ureters into the vagina by sounding them in the manner recommended by him, dissecting them out, splitting them, and stitching them to the vaginal wall. The second step of the operation, after the lapse of some time, was the extirpation of the bladder. An incision was made above the symphysis without opening the peritoneum, then the entire bladder was shelled out from the cellular tissue as far as the urethra without the use of cutting instruments. The cavity left was stuffed with iodoform gauze. The operation was then continued from the vagina, whose anterior wall was divided transversely and the rest of the bladder cut off from the urethra. After this the anterior vaginal wall was stitched to the anterior margin of the urethra, the posterior wall to the posterior margin, thus making the urethra terminate in the vagina. This suture did not heal completely. In a following operation, therefore, the closure of the vulva was made in a longitudinal direction. At present it is closed with the exception of a small fistula. The patient was presented to demonstrate the result of this hazardous operation.

PARVIN (Philadelphia) read a paper on

THE INDICATIONS FOR THE INDUCTION OF PREMATURE LABOR.

He first considered the various diseases of the mother which may furnish an indication. 1. Diseases of the kidneys will but rarely give an indication, since an appropriate prophylaxis will suffice for the treatment. 2. Chronic heart disease likewise is rare as an indication. 3. Diseases of the respiratory organs. In these, satisfactory results are often obtained by premature labor. 4. Chorea, in those cases in which the life of the mother is jeopardized and improvement cannot be obtained by other treatment. 5. In eclampsia the question is still open, though this furnishes but rarely the

indication. 6. Occasionally in cancer of the rectum. 7. In severe cases of rheumatism. 8. In mammary cancer.

In the interest of the child it is necessary: (a) In cerebral apoplexy of the mother. (b) In cholera. Antisepsis has contributed to lessen the danger of the operation. Altogether Parvin has collected one thousand cases of induced premature labor. In eclampsia the convulsions cease as soon as the child is born. Parvin believes that eclampsia is due to infection. The infection of the mother is brought about by the child, and it is good to remove the latter. For this operation it is difficult to formulate the indications, more difficult than for many other operations. We must consider what dangers threaten the mother and what dangers are connected with the operation.

MACAN (Dublin) read a paper on

THE INDUCTION OF PREMATURE LABOR.

He referred to the papers of R. Barnes, who had a maternal mortality of 10 per cent while that of the children was 5 per cent. The woman alone has the right to decide which operation shall be performed upon her. The Cesarean section is merely an elective operation.

We must avoid all means which may cause intra-uterine hemorrhage, and such measures should be resorted to as induce labor as soon as possible. The best measure is the introduction of Barnes' bags, by which labor is brought on within an hour, although it is often desirable to proceed more slowly. In the *British Medical Journal* fifteen cases have been reported which were treated in this manner. In nearly all the labor was terminated in one sitting. In Catholic countries the objection of the clergy often decides the question against craniotomy and in favor of the induction of premature labor. Macan also spoke of Murphy's results in placenta previa by the induction of premature labor.

CALDERINI (Parma) read a paper on

THE INDUCTION OF PREMATURE LABOR.

After an historical and statistical review of induced premature labor, he stated that in contracted, non-rachitic pelves, by virtue of antisepsis, the induction of premature labor is permissible where the conjugata vera measures up to 8.5 cm., in certain cases even more. By special care the mortality of premature children can be diminished. In contracted pelves the best methods of inducing premature labor are hot douches with the ordinary irrigator through Fergusson's speculum, and the introduction of a bougie into the uterus throughout its entire length. Often it is advantageous to add to these

methods perforation of the membranes. In the interest of the child premature labor should not be induced when the pelvis is rachitic and the conjugata vera measures less than 7.5 cm. Through antiseptis the induction of premature labor has become a valuable auxiliary in many diseases complicating pregnancy. Calderini then gave a comparative table of the various modes of operation employed in Italy in cases of contracted pelvis. These are: version (65 cases), high forceps (193), perforation (144), Porro (59), conservative Cesarean section (23), induction of premature labor (305), symphysiotomy (23). The maternal mortality was smallest (4.3 per cent) in version, greatest (43.47 per cent) in Saenger's Cesarean section; in the induction of premature labor it was also very small (4.59 per cent). The fetal mortality was smallest in Saenger's Cesarean section (8.69 per cent), greatest in version (32.3 per cent). In induced premature labor it was 26.88 per cent. In contracted pelvis, therefore, where the conjugata vera measures 7.5 cm., the induction of premature labor would deserve the preference when the patient presents herself in time; and combined version, at the end of pregnancy. In the interest of the child Cesarean section would be preferable, were it not that the maternal mortality is still too great to permit it in cases where the induction of premature labor, version, or the use of the forceps is still possible, especially as the results of these operations may continue to improve in time.

DOHRN (Königsberg) read a paper on

THE INDUCTION OF PREMATURE LABOR.

Whoever studies the history of the obstetrical operations will gain the conviction that, in Germany, no single operation has undergone so many variations in the estimation in which it has been held as the induction of premature labor. About fifty years ago it was first performed in imitation of English practice. Its advocates have had a hard fight to secure for it its proper place. In 1820 Oslander said: "The fruits which this doctrine will bear in Germany will be decided by posterity; neither morals nor police can defend these so-called operations." Of more recent authors Bandelocque was especially opposed to it. In the succeeding decades the views changed; in several German clinics good results were obtained with the operation, many obstetricians had employed it. In the middle of the present century its place seemed secure. In 1868 Spiegelberg raised new objections. He pointed to full-term labors in contracted pelvis, and contrasted them with the results of induced premature labor. He concluded that it was better not to interrupt the pregnancy artificially.

But it was soon shown that Spiegelberg's comparisons did not afford a true view of the case. Stadfeld and Dohrn established the principle that the value of the induction of premature labor could be ascertained only by comparing the results of full-term labor and induced premature labor in the same person. This is to-day recognized by everybody. But even in most recent times it seems that induced premature labor had to suffer some limitations, since better results were obtained with perforation and Cesarean section. However, this objection has likewise been overcome, and particularly by the operators who had the most brilliant results with these operations. Thus Leopold has given warning that the results of those operations should not be valued too highly in comparison with induced premature labor. Whoever has successfully performed it in contracted pelvis will undoubtedly have learned to appreciate its value. When I consider the results of my 76 cases, I gain the impression that the operation is a beneficent one. Every large obstetric practice is not devoid of sad experiences, in view of which I should not like to be deprived of the pleasure which the induction of premature labor has afforded: the happiness and joy of many a family are due to it alone. Wyder and Leopold have furnished an instructive group of cases. Wyder has collated 180 cases of contracted pelvis since the introduction of antiseptis, I have furnished 91 additional cases, all together 271 cases of induced premature labor in contracted pelvis under antiseptic precautions, with 163, or 60.1 per cent, living children who were kept alive. In the same persons 171 full-term labors had resulted in only 50, or 29.2 per cent, children remaining alive. Let us assume that these 271 cases had not been subjected to the induction of premature labor; in that case the result probably would have been likewise 29.2 per cent or 79 living children. Hence in these 271 cases the lives of 84 children have been saved by the induction of premature labor. With reference to the effect on the mothers we find: Among 225 cases, 12 maternal deaths; among 93 additional cases, 4 deaths—together 318 cases of induced premature labor, with 16 maternal deaths, or 5 per cent. Of course this rate is still high, but the statistics of full-term labors in contracted pelvis are worse; and in future better results will be obtained—thus Ahlfeld has reported 111 cases with 2 maternal deaths. In Germany, therefore, induced premature labor has also given good results. The results thus far obtained with perforation cannot be compared with it. To be sure, Leopold has shown that here, too, better results are attainable; but in 215 perforations at Halle, Berlin, and Leipzig the mortality was 5.6 per cent. Therefore, even leaving out of consideration the loss of infantile life, it is doubtful whether the mother would be benefited by perfora-

tion. The Cesarean operation cannot come in question so long as the induction of premature labor is possible. Of 23 Cesarean sections by Leopold, 8.6 per cent died. How much higher would this percentage rise if the Cesarean operation were performed in more general practice? It is true, the Cesarean section saved 87 per cent of the children, but the maternal deaths again counterbalance the results. The lower limit for the induction of premature labor is 7 cm.; 7.5 cm. is too small. Sixty-five cases in recent literature show 61 per cent of living children. Every one of us will admit that we can materially improve the results of induced premature labor, indeed far beyond the present figures, by strict antisepsis, careful diagnosis of the pelvis, correct estimation of the size of the child, and the determination of its regular position. Meddlesome interference has often done harm; after premature labor has been induced the child will not be delivered by operation.

DOBROWREWOW (Moscow) reported the results of induced premature labor in Russia. General rules cannot be given. In order to form a correct opinion, each concrete case, after careful examination, must be considered on its own merits. In irregularly contracted pelves great care must be exercised, for the pelvis cannot be measured with mathematical exactness; an absolute prognosis is out of the question. Dobrowrewow prefers induced premature labor to Cesarean section. Children born before the thirty-fourth week can be kept alive only under exceptional conditions.

LEOPOLD (Dresden) has had 75 cases of induced premature labor, with one death; 42 cases of Cesarean section, with 4 deaths—*i.e.*, 2 per cent mortality in induced labor, 9 per cent in Cesarean section. It should be pointed out that induced labor begins, in the majority of cases, where Cesarean section ceases; or the reverse, Cesarean section will begin where induced labor stops. The limit is at 7 to 7.5 cm. of the true conjugate, and although the relative indication for the Cesarean section is made rather liberal, it will hardly be beyond 7.5 cm. of the true conjugate. Induced premature labor is an exceedingly beneficent operation, and with the aid of antisepsis its results have much improved. Although our results are not very good as regards the children, this is due to the fact that we are not as yet masters of the time when the labor should be induced. The determination of the thirty-fourth week is still rather difficult, and the same may be said of the transverse diameter of the fetal head. The mode of determining the period of pregnancy requires greater precision. Much also needs to be done in the way of preserving premature children. The Cesarean section is associated with far

more dangers and should not be generally extended. Unfortunately, many cases of Cesarean section have been performed in private practice. They have been buried, the mothers with them, and we learn nothing about them. This operation belongs solely to the clinics. If we are able to choose the time, we should certainly try in the first place to secure living children to the woman; in the justo-minor pelvis, when the conjugata vera measures 8.5 cm. At the end of pregnancy, however, and in private practice, one more perforation had better be performed, and the next time premature labor induced.

ZWEIFEL (Leipzig) agreed with Leopold. He remarked, in opposition to Veit, that the relative indication for the Cesarean has now been extended, but by encroaching on the mutilating operations. He thought the thirty-fourth week was too early, and cited a case in point. Two dead children, a flat, contracted pelvis, version failed. The child passed the contracted portion, but the skull was deeply indented, and the child died. The depth of the indentation showed that the conjugata vera measured 7.2 cm. The induction of premature labor had been advised, and the patient returned in the thirty-fourth week, but she preferred the Cesarean section. Zweifel did not consent to it, but promised her a living child. Everything went well.

The two operations do not come into opposition; the Cesarean section begins at an altogether different limit, if the possibility of induced premature labor was at all present. A woman from the working classes, with the wound of the Cesarean operation, loses her power of self-support. Of the internal diseases, affections of the kidney are probably the only ones coming in question. Heart diseases must be considered individually, according to the degree of compensation. Here, too, there is a difference between the first and subsequent pregnancies. In every disease the induction of premature labor may come in question for the purpose of cure or relief.

SAENGER (Leipzig), owing to the unfavorable results of induced premature labor for the children, advocated the conservative Cesarean section. The limits in which induced premature labor comes in question approach notably close to absolute pelvic contraction. The question whether Cesarean section or the induction of premature labor is to be performed depends undoubtedly upon the results for the mothers. The Cesarean operation is capable of improvement; it is only six to eight years old, but induced premature labor one hundred and twenty years. Calderini's statistics need not frighten us; the Porro operation does not come in question, it has nothing to do with premature labor. Saenger gave the recent results of the Cesarean section as follows: Schauta, 15 cases, mor-

talitv 0; Leopold, 42 cases, mortality 4 per cent; Zweifel, 27 cases, 1 death; Saenger, 7 cases, mortality 0; another operator, 6 cases, mortality 0; all together over 100 cases, with 6 per cent mortality. This is an advance over former times of 2.6 per cent. Saenger spoke for the employment of the Cesarean section in the higher degrees of pelvic contraction in which induced premature labor would still come in question, but in which there is *a priori* little hope of saving the child. He protested against any comparison with the Cesarean section in private practice.

FEHLING (Basle) has observed more than 60 cases of induced premature labor without any death, and with more than 80 per cent of living children. The children of the Cesarean section are clinical children, like the others; we do not know what becomes of them. As to the modes of inducing premature labor, we must seek for those which give good results in the hands of the general practitioner. Krause's method is connected with great dangers—profuse hemorrhage and liability to secondary infection. Performed from the cervix it is more certain. Tamponing with iodoform gauze does not act as quickly and fails now and then. After disinfection, tamponing in the lateral position should be attempted. Barnes' colpeurynter is a reliable means, but the pains decrease when the instrument is removed. Should the pains fail, combined version after Braxton Hicks is to be performed. This has given good results in placenta previa, why should it not do the same in this operation?

SAJITZKI (Moscow).—There are two kinds of uteri. The speaker had seen catheters remain in them for from twelve to thirteen days without exciting pains, and perforation of the membranes failed to produce true pains in two weeks. With the introduction of antiseptis, measures formerly reliable began to fail. He instanced a case with fibroid. Premature labor was to be induced *in extremis*; four catheters remained for two weeks. In the above-mentioned perforation of the membranes the temperature remained normal the whole time. A considerable proportion of the prompt measures depend upon sepsis. Recent investigations by Schatz prove the truth of this statement. In one case we secure energetic, good pains, in other cases none at all. The same forms occur everywhere. In Schatz's procedures no sepsis existed. The more sepsis is avoided the more uncertain the measures become. Even if the pains last two or three weeks this is not lost time. The best results are obtained then by version according to Braxton Hicks. Sajitzki mentioned two cases in which perforation of the membranes led barely to dilatation of the cervix, and premature detachment of the placenta occurred. After manual dilatation, the cervix being still unobliterated, he introduced

two fingers, turned, and brought down a foot. From the moment when the foot was firmly placed in the cervix strong pains set in. Sajitzki has observed five similar instances, the children being quite active. In one case four weeks passed after perforating the membranes; the child weighed 6,500 gm. Labor was first induced at seven months and terminated at eight months. Version was very difficult; an arm was fractured; child living. In another case version was performed earlier. Owing to an error in the calculation, the child was $6\frac{1}{2}$ months old; it remained without special care, but throve finely. In 19 cases of induced premature labor Sajitzki secured 19 living children and lost none of the mothers. Premature labor is quite free from danger; complications frequently result from defective pains. As intimated above, there are two kinds of uteri: 1. Tense, firm uteri; these can be easily irritated. 2. Those which are limp; but even in such cases good results are always obtained.

MAY (Utrecht).—In private practice, instead of Cesarean section, the head should be perforated, in the hope of inducing premature labor in future pregnancies. It may be said that there is only a hope of later conception, but then in the Cesarean operation likewise we have nothing but hope. Laparotomy is always a grave operation, in every case of which there is danger of ileus.

NINTH SESSION, AUGUST 7TH, 3 P.M.

PROF. CHROBAK (*Prague*) in the Chair.

VEIT (Berlin) read a paper on

THE DOCTRINE OF HEMATOCELE AND HEMATOMA.

Blood effused free into the abdominal cavity cannot be demonstrated because it is not palpable; formerly he had ascribed this fact to a personal lack of skill. Blood never causes adhesions; hematocele ensues only when hemorrhage takes place into adhesions. Blood coagulates in the abdominal cavity only when it comes in contact with adhesions. Therefore the only symptoms are those of hemorrhage—collapse, weakness of the heart, small frequent pulse, pallor, chill, etc.—and in order to diagnosticate hemorrhage into the abdominal cavity, other forms of hemorrhage must be excluded. In answer to an objection raised by L. Landau, Veit stated that effusion of blood could be demonstrated by percussion, but by the time this can be done the woman is moribund.

TAIT (Birmingham).—Every penetration into the abdominal cavity is very important, for otherwise there is an absence of all noxious substances; the opportunity for coagulation is diminished; no coagula form after hemorrhage into the broad ligaments. Besides, here, in the broad ligaments, the second great hemostatic—pressure—is present. This is absent in the abdominal cavity. Hemorrhage into the broad ligaments is soon limited. For this reason treatment must likewise be different. Hemorrhage into the abdominal cavity requires immediate treatment, otherwise it will not help the patient; the cavity must be opened and the hemorrhage arrested. So far I agree with Veit. Hemorrhage into the broad ligament, however, only occasionally calls for interference. The differential diagnosis is rather easy. It rests upon the presence or absence of bulging. In intraperitoneal effusion no definite swelling exists anywhere; in the extraperitoneal form there is a large, convex, distinct swelling, a fixation, no bulging. The shape of the mass is concave. The upper limit is the broad ligament; the lower limit is the deepest part of the peritoneum, which is so fixed that the hemorrhage spreads round about the uterus. The form resembles a Gothic arch. This is the case in twenty-nine out of thirty instances. When the hemorrhage is large and separates the layers of the ligament, there is an absolutely pathognomonic sign—the hemorrhage extends behind the rectum. If the finger be introduced into the rectum and a distinct stricture be felt, it positively indicates an extraperitoneal hemorrhage. In intraperitoneal hemorrhages nothing like this occurs. This is well known, and is equally true for man, as has been proved by Pridgin Teale in cancer of the rectum. In both it is equally important.

MARTIN (Berlin) confirmed this statement from his own experience in some cases, but it applies only to one side. This observation has also been published. The uterus was on the other side. Tait's observation that the uterus is entirely surrounded by blood is particularly remarkable. Martin found the effusion only in front of the rectum; in another case Martin found the rectum quite free. In still another case, the wife of a physician, something similar was found, the tumor again disappeared, and subsequently a new effusion occurred around the rectum.

NOEGGERATH (Wiesbaden) read a paper on

THE TREATMENT OF OVARIAN TUMORS BY ELECTRICITY.

The electrical effect of the constant current has been frequently demonstrated, especially in cases of ovarian tumors.

Noeggerath had under treatment a case of sterility. A tumor lay to the right of the uterus, in shape very similar to a wandering kidney. This tumor was reduced to one-quarter its former size in the course of some weeks. Several similar cases were mentioned. In one case there were several large cysts extending into the hypochondriac region. Noeggerath treated them by electricity with little hope of success. By the end of the year the tumor diminished in size. Later the patient presented herself again for neurasthenia, when the former large mass was found to have shrunk to the size of a hen's egg. The method used by Noeggerath in all cases, with one exception, is as follows: The current is furnished by rather large elements; the negative pole is introduced into the lower portion of the tumor; the positive electrode is large. The current is strong enough to be felt by the patient. The sitting lasts one-half hour, and toward the end of the treatment one and a half hours. In extra-uterine pregnancy Noeggerath uses the faradic current, which is better adapted for larger tumors; for ordinary cases he prefers the galvanic current. The latter acts best in the common unilocular cysts of small or medium size. In such cases the effect of the treatment is really wonderful. The cysts are reduced to a size slightly exceeding the normal ovary.

MAROCO (Rome) read a paper entitled

A RARE CASE OF SUBLIMATE POISONING WITH EXTRAORDINARY SYMPTOMS.

We know of many cases of poisoning by sublimate, either by the patient himself or after surgical procedures where the field of operation was suitable for absorption. But we do not know how much sublimate the organism can bear, and for the same reason we are not positive about the symptoms. In one case diarrhea occurs; in another, great collapse; in a third, bloody stools. The cause is always ascribed to the sublimate, although we do not know to what extent it is to blame, as we are ignorant as to the largest dose. Therefore Marocco believes that the following case will be of general interest. In March of the present year a patient presented herself with syphilitic roseola. She claimed to have been infected in some other polyclinic. By an oversight, 6 ggm. of sublimate were injected into the glutei. Even as she left the polyclinic she was very restless and had to ride home. After three hours Marocco found her very pale, terribly excited, with dry tongue and contracted pupils. Temperature 96.4° F.; had passed large quantities of watery, spastic urine. The case terminated favorably. The case is unique, first, in the dose be-

ing known; second, on account of the cerebro-spinal symptoms.

NEUGEBAUER, JR. (Warsaw), read a paper on

ACANTHO-PELVIS.

When the head passes through a narrow pelvis and bruises the anterior vaginal wall, why is not the posterior wall equally contused? This question had been asked already by Schroeder. According to him, the posterior lesion is also very frequent, but adhesive peritonitis occurs, thus closing the wound. Schroeder assumed acantho-pelvis as the cause of the injury to the posterior vaginal wall. Some years later Neugebauer saw a description of the same pelvis in the *Zeitschrift für Geburtshülfe*. On the promontory was a pointed projection. The woman had been delivered twice; after the first labor she suffered from vesico-vaginal fistula; she died in the second labor. The soft parts were preserved in alcohol. Hofmeier found, besides the cicatrix of the fistula, a lesion in Douglas' cul-de-sac, and suspected the sharp spine to be the cause of it. By accident Neugebauer was able to confirm this supposition. The specimen presented was said to be unique. Neugebauer had discovered it by chance at the post-mortem of a woman dead of phthisis pulmonalis. The uterus was very high, though there was no tumor. The cervix was adherent to the edge of the promontory, thus keeping the uterus elevated. The pelvis was narrow, and the patient had had only one labor, during which the posterior vaginal wall was injured and the adhesion to the promontory occurred. An acute-angled ante flexion formed and caused sterility, and in this way nature saved her from death in the event of a second delivery. The uterus sank down by its weight and drew out the spine of Hofmeier. The spine was as thick as a pin and 1 cm. in length. Douglas' cul-de-sac was divided into two pouches. This case throws light on the question as to the origin of acantho-pelvis. Killian first described it and compared the spines with puerperal osteophytes. His paper was severely criticised by Lambl. The latter was in the right. These spines are merely the product of the increased traction of the ileo-psoas. The spines represent simply a physiological variation, particularly in rachitic pelvis. Neugebauer proposes to call this form atypically contracted pelvis. Such pelvis are not extremely rare. In one of Neugebauer's cases, during the third delivery, the posterior vaginal vault was torn, with some prolapsus; the wound was sutured, and the patient recovered. Breisky was able to follow the development of such an exostosis in two succeeding labors.

BOISLEUX (Paris) reported a case of

SPONTANEOUS RECOVERY FROM EXTRA-UTERINE PREGNANCY.

In the third month a spontaneous extra-uterine abortion seems to have occurred. Amid profuse hemorrhage the patient passed a piece of decidua without any portion of the ovum; at the same time behind the right side of the uterus a tumor was discovered the size of a hen's egg. The menses had been absent for three months. The tumor became smaller and the patient recovered. Boisleux maintains that the expulsion of the decidua alone is a proof of the presence of extra-uterine pregnancy, and that, at the same time, the casting-off of the decidua indicates the death of the extra-uterine ovum, thus excluding an operation.

The following papers were also read:

WINCKEL (Munich): "On the Treatment of Hernia Vaginalis Labialis" (with specimen).

ASSAKY (Bucharest): "On Extraperitoneal Hysteropexy (Ventro-fixation of the Uterus)."

WYLIE (New York): "The Influence of Abnormal Conditions of the other Organs of the Pelvis and Abdomen in causing Symptoms usually attributed to Displacements of the Uterus."

TENTH SESSION, AUGUST 8TH, 8 A.M.

PROF. FOCHIER (*Lyon*) in the Chair.

SCHATERNIKOFF (Moscow) exhibited an

APPARATUS FOR VAGINAL IRRIGATION

which can be used at the same time for washing. It is intended to be carried in the obstetric bag of the physician or midwife. He also showed a washstand for use in the clinic. The stand is connected with reservoirs containing antiseptic solutions.

BOLDT (New York) read a paper on

THE KNOWLEDGE OF THE MUCOUS LINING OF THE UTERUS.

On microscopic examination of the glands of the cervix and body of the uterus, Boldt found that they were surrounded by a network of smooth muscular fibres which are connected with the muscles of the uterine wall. The physiological function of these glands is the production of mucus.

MASSIN (St. Petersburg) read a paper on

THE RESULTS OF THE ELECTRICAL TREATMENT OF UTERINE
FIBROMA.

He reported the experience of Russian physicians with the galvanic current. The general verdict is favorable, but not enthusiastic.

CLARKE (Cambridge, Mass.) read a paper on

THE IMPORTANCE OF EARLY RECOGNITION OF PYO-SALPINX AS A
CAUSE OF SUPPURATIVE PELVIC INFLAMMATION.

After referring to the earlier views and teachings in regard to the pre-existing cause of certain forms of "suppurative peritonitis" and "cellulitis," Clarke says experience shows that purulent collections occurring in and about the broad ligament can often be successfully treated, for the time being, by free incision and drainage through and below Douglas' cul-de-sac. When, however, the uterine adnexa are the seat of the morbid process, a cure attempted by such practice will not be permanent. Incision and drainage below may for a while relieve present symptoms, but sudden attacks will recur at intervals more or less remote. The recurrence of such attacks, in the present light of pathological investigations, cannot be regarded otherwise than as indicative of tubal inflammation or lesion, which is always fraught with danger. A tubal or an ovarian abscess, though having no direct communication with the abdominal cavity, sometimes occurs and leads to a fatal result. In such a case the cause of death is owing to diffuse and general peritonitis resulting in extensive adhesions, in disturbance of the vascular channels, and in exhaustion. These frequent and irregular occurrences of the menstrual turgescence of the uterus and the appendages must inevitably lead to the destruction of the tissues and follicles of the ovaries. The prolonged continuance of such a condition, when ovulation and menstruation are not wholly interrupted by surgical measures, hastens the development of pyo-salpinx. The only rule safe to follow when such morbid processes make their appearance is to effect complete removal of the inflamed tubes and ovaries. In such cases, after the serous or the purulent exudation has been absorbed, the residual products may become hardened and may remain in a calcified state for an indefinite period. Such cases are liable at any time to take on acute and septic processes, and to become the source of much danger. The formation of foul and poisonous gases, as well as the alteration of the pus cells, is liable to give rise to a fatal result, especially when the inflammation has had its starting point in the uterine appendages. Cases illustrative of

these conditions, though seen too late to be treated by laparotomy, are mentioned by the author. In the consideration of a case of pyo-salpinx, the author adds, we should first ascertain whether the tube is closed and has been distended with a purulent secretion. The success of laparotomy in most cases can be assured if the affected tube be removed before the escape of any part of the contents into the abdominal cavity.

Sometimes the tubes become so greatly distended that the pus exudes through their fimbriated extremities. In cases in which both tubes are involved, the danger from such a condition is greatly increased. In a case to which the author was recently called, suppuration had gone on to such an extent that the distended tube on each side could be felt throughout its entire length. The purulent collection had begun to escape through the distal extremity of the tube. It was only by prompt resort to laparotomy that a fatal result or a prolonged suffering was averted. Cases in which the puerperal state was the exciting rather than the predisposing cause, are mentioned and reported at some length.

From experience in puerperal cases of acute peritonitis treated by abdominal section, we are encouraged to hope that early operation will be effectual in saving the lives of many. The fact that tubal disease which has existed for years can be cured by laparotomy shows most clearly the importance of arriving at a correct diagnosis at the earliest date possible. For besides lessening the dangers to life, the occurrence of extensive adhesions would be prevented, much suffering saved, and many years of enjoyment and usefulness often be secured to the patient. As our daily experience is adding more and more to establish the fact that pelvic abscess is primarily due to tubal disease, a resort to exploratory incision to insure a correct diagnosis is scarcely necessary.

In contrast to some of the cases in which the operation for the removal of the uterine appendages was too long delayed, a successful case is mentioned and reported at some length. The history of the case showed that there had been ovarian pain and pelvic inflammation for some two years before the patient came under the author's treatment. Before being called, there had been febrile disturbance for some days. The patient had miscarried, but there was a retained placenta. Under the influence of an anesthetic the removal of the placental mass was easily accomplished. The right Fallopian tube could be distinctly felt to be enlarged and to contain fluid. Three days afterward laparotomy was performed. The tube was found to be distended and of the size of an orange. The posterior aspect of the tube was tense; its walls were thin and appeared in great danger of rupturing; the proximal end of the tube was comparatively free from fluid.

The ovary and tube of that side were removed without causing rupture. The left ovary and tube were also removed, the ovary being cystic and inflamed. The tube contained purulent fluid. The parts were united by means of animal sutures. The operation was done according to the method devised by Dr. H. O. Marcy for his work in his private hospital, where the author had often assisted. The coaptated parts readily glued themselves together. The patient made a speedy and complete recovery. There can be but little doubt, had the operation been deferred another week, the right tube would have ruptured into the abdominal cavity. The author reports at some length another case of pyosalpinx in which laparotomy according to the same method was successfully resorted to. The patient had suffered much from constitutional disturbance. The temperature had ranged from 101° to 103° F. Five months before, the patient had miscarried at the fourth month; she was reduced in flesh and was much exhausted. The chief trouble, however, appeared to be centred in the left tube and ovary. After the first examination under ether, operative measures were deferred for ten days, at the expiration of which time laparotomy was undertaken. Numerous adhesions connected with the left tube and ovary were found. The tube was found twisted and doubled upon itself, with the fimbriated extremity pointed downward. The anterior surface of the tube was thin. This portion of the tube had been greatly distended and projected forward. It was difficult to see how it was possible that the textures of the tube and pouch could have continued much longer without rupturing. The tube filled with pus extended into an abscess of the ovary. The right ovary was found to be cystic, and its tube inflamed and distended with fluid to the size of a finger. The adhesions were broken up and the tubes and ovaries were removed. All points of bleeding were controlled by sewing together each of the several tissues in their proper order. The shoemaker's stitch and the buried suture were employed, as in the preceding operations. The patient wholly recovered, the parts uniting without suppuration or inflammation.

KEPPLER (Venice) read a paper on

THE SEXUAL LIFE OF THE FEMALE AFTER CASTRATION.

The author has performed 46 bilateral castrations; of these, 39 were cured and 7 died. We must exclude from further consideration 18 cases of which no notes were accessible, 2 died from intercurrent diseases, and, as one case is too recent, only 18 cases remain available for study. The operation was

always performed for disease of the sexual organs, never for psychosis or neurosis. The operation was performed in

29 cases for disease of the tubes, purulent salpingitis, and pyo-salpinx ;

2 cases for oöphoritis and peri-oöphoritis.

4 cases for cheesy affection of the tubes and ovaries (tuberculosis ?) ;

1 case for occlusion of the tubes, probably congenital ;

1 case for rudimentary uterus with normally developed ovaries ;

9 cases for uterine fibroma.

The ovaries were always removed with the tubes. The therapeutic effect was good in all cases, the patients being relieved of their symptoms.

The anatomico-physiological results of the castration were likewise uniformly good.

1. In no case did a typical menstrual hemorrhage occur after the operation.

2. The countenances of the women were remarkably changed ; they had become more quiet and beautiful.

3. In all cases the conjugate had become shorter, this effect having been more pronounced in the younger patients ; the shortening amounted to two to three centimetres.

4. The vagina became shorter and narrower, the mucosa thinner, smoother, and paler. The cervix became shorter, the uterus smaller, the introitus vaginae narrower.

5. The breasts became smaller and the nipples paler.

6. The tendency to become stouter which has been described by other operators has not been observed in any case.

7. The sexual instinct was always preserved. Three patients, virginal before operation, married later and lived in happy wedlock. The passions persist particularly when the operation is performed early on young persons.

8. In fibroma the results of the operation were good, both as regards the hemorrhages and the shrinking of the tumors.

MENGE (Berlin) read a paper on

GONORRHEAL SALPINGITIS.

The parasitical nature of purulent salpingitis is universally recognized as a matter of course, although the positive demonstration of bacteria in such cases is rare. Menge has examined 26 cases of tubal disease which were operated upon by A. Martin, and found streptococci in 2, staphylococci in 1, and in 1 he found a saprophytic bacillus of which he obtained pure cultures. In three cases Neisser's diplococcus was found in pus, but its culture failed. Of these three cases, two were bilateral pyo-salpinx, and one unilateral pyo-salpinx

with left catarrhal salpingitis. In these cases it was not possible to demonstrate the gonococci in the wall of the tube as well. Menge then discussed the question whether a gonorrheal peritonitis could arise from the access of pus containing gonococci. Although it is generally asserted and assumed that the gonococcus can flourish only on cylindrical epithelium, Menge believes that, in analogy with gonorrheal inflammation of the knee joint, this question cannot be denied, since the synovia of the knee joint is histologically similar to the peritoneum. In those cases in which chronic and acute peritonitis occurs in connection with gonorrheal salpingitis, it is not yet clear whether the cause of these inflammations is to be sought in a specific gonorrheal infection, or in the chemical irritation of the secretion, or in a mixed infection.

ABEL (Berlin) presented a specimen from an

EXTRA-UTERINE PREGNANCY.

The sac had ruptured early in the fifth week of pregnancy, and the patient died of hemorrhage before operation. Abel also spoke of the lymph vessels of the non-gravid uterus.

GOTTSCHALK (Berlin) presented a number of colored drawings showing

THE DEVELOPMENT OF THE PLACENTA,

as studied by him in two cases of early abortion.

LANDAU (Berlin) read a paper on

THE DIAGNOSIS AND TREATMENT OF DISEASES OF THE TUBES.

The diagnosis of tubal cysts is very difficult, especially with reference to the nature of their contents—whether hydro-salpinx or hemato-salpinx, for neither the history nor the group of symptoms is absolutely characteristic. According to Landau, there are, however, two pathognomonically valuable signs. The first results from the mode of development of the tubal cyst. For in hydro-salpinx, the sac being not alone elastic, but the muscular wall remaining intact as in no other tumor, the sensation on palpation resembles that of an air cushion—a rebound peculiar to this tumor. Moreover, in hydro-salpinx it is possible to express fluid into the uterus—a fact already observed by Frankenhaeuser, who expressed the contents of the hydro-salpinx into the uterus and collected it. In purulent tubal cysts the above-mentioned sign is generally lacking, because the muscular wall has its contractility impaired by meso-salpingitis; besides, the cysts are smaller and fixed by pseudo-membranous adhesions. Another aid in the

differential diagnosis is puncture of the sac, which Landau has performed rarely through the abdominal walls and more frequently from the vagina. He admitted the possibility of thus tapping an extra-uterine pregnant tube. But this occurrence he believed to be free from danger, and even favorable, since the puncture of the sac will more certainly arrest the further development of the fetus than would other measures, such as the injection of morphine.

Landau has performed laparotomy for hydro- and pyosalpinx fifty-two times with but one death. However, not all patients were cured of their troubles; this remark applies particularly to those in whom the ovaries were left behind. According to Landau, there is also an intermittent form of hydro-salpinx which occasionally passes into the chronic, permanent form. Landau believes he has cured this intermittent form at times by simple puncture. When the exploratory puncture shows merely watery contents, Landau thinks it is better to spare the tube, and restricts himself to puncture alone.

SPERBER (Hamburg) exhibited a specimen of a fetus, born four weeks before term, that showed, besides some other morbid conditions, numerous signs of

INTRA-UTERINE RACHITIS

on many different bones, every part of the fetus being strongly curved.

ELEVENTH SESSION, AUGUST 8th, 11 A.M.

PROF. SIMPSON (*Edinburgh*) in the Chair.

APOSTOLI (Paris) read a paper on

ELECTROLYSIS OF MYOMATA.

In gynecology the constant galvanic current finds its chief application in endometritis and fibro-miomata of the uterus, especially in all circulatory disturbances and as an analgesic remedy (amenorrhea, dysmenorrhea, and metrorrhagia). It is a powerful agent in retarding the development of benign neoplasms, and also in hastening the absorption of perimetrial and parametrial exudations. In many cases of perimetritis and in certain cases of catarrhal salpingo-oöphoritis its absorbent effects are good; it is altogether ineffectual, and even injurious in large doses, in all purulent inflammations of the adnexa, especially when the negative pole is in the uterus. In this sense the constant galvanic current can even be employed as a diagnostic auxiliary in cases in which there is some

doubt as to the nature of peri-uterine exudations—whether hematoma or pus—for the reaction against its employment betrays the presence of pus.

Apostoli distinguishes two effects of the constant galvanic current—the polar and the interpolar. The stronger currents of over 50 milliampères form the foundation of the mode of treatment introduced by Apostoli, who praises the following effects:

a. A circulatory drainage, a direct effect of the calorific power of the current; it is proportionate to the square of intensity.

b. An antiseptic effect fatal to microbes, which rises with the intensity of the current.

c. The rapidity of the effect.

d. The easy general applicability of the method.

e. The rare occurrence of relapses after the application.

The mode of application must be chiefly intra-uterine, for the results obtained by other authors from the vaginal application do not equal those of the former. The reason lies, among others, in the simultaneous antiseptic and caustic effect of the current, as well as in the possibility of using in the uterus much stronger and therefore more certainly and more rapidly acting doses, the intra-uterine application being less painful. Galvano-puncture from the vagina to a depth of from two to five millimetres, with a needle-shaped golden trocar insulated up to its point, often aids the intra-uterine application of the current.

According to Apostoli, the intra-uterine application is devoid of danger in comparison with the medicinal and surgical methods of treatment. In the course of eight years Apostoli has made intra-uterine applications of the galvanic current 11,499 times—8,177 times galvano-caustic intra-uterine positive, 2,486 times ditto negative; 222 times he has employed positive, 614 times negative vaginal galvano-puncture. The application was made for fibro-myoma 531 times; for simple endometritis, 133 times; for endometritis associated with inflammation around the uterus, 248 times. Nearly one-half of these were under ambulatory treatment. Among these cases 3 ended fatally in consequence of the treatment, 2 of them from galvano-puncture for fibroma and ovaro-salpingitis respectively, 1 from the galvano-caustic treatment of an ovarian cystoma which was mistaken for a fibroid. In 30 instances pregnancy ensued after intra-uterine galvanic treatment.

DANION (Paris) pointed to several contradictions of which the advocates of intra-uterine galvano-caustic and galvano-puncture were guilty. In one of Apostoli's cases which ended fatally

by peritonitis after galvanic treatment, no trace was found of a caustic effect on the endometrium, despite several applications of currents of 100 milliamperes. Danion declares the chemical galvano-caustic, the intra-uterine effect, and the galvano-punctures in the treatment of fibroma of the uterus to be absolute scientific errors. The method is not free from danger; the mortality at present amounts to five or six per cent. Without any galvano-caustic it is possible to obtain, by means of the electrical tampons devised by Danion and reversal of the current, more rapid and complete results, without subjecting the patients to any danger. About one hundred observations with about two thousand applications, many of which were performed in conjunction with Lucas Championnière, confirm these statements.

GAUTIER (Paris) spoke on the

TREATMENT OF UTERINE FIBROMATA AND SUPPURATIVE OVARSALPINGITIS BY THE CONSTANT CURRENT.

He had been for a long time Apostoli's first assistant and had employed himself for eight years with the use of electricity in gynecology. On the strength of his experience he asserted that the symptomatic cure of fibroma of the uterus depends upon the intensity of the electricity employed. This intensity again depends upon the sensitiveness of the patient. The positive pole at a current strength of more than 100 milliamperes has a hemostatic and antiseptic effect. He predicts a great future for galvano-puncture, since by its aid the procedure is more rapidly effective. Gautier's experience embraces ninety-five cases. In two cases he observed a shrinking of the tumors to one-third of their volume.

In purulent salpingo oöphoritis he uses only weak galvanic currents of from 20 to 80 milliamperes. However, in this direction the observations are not yet concluded. Gautier believes the extra-uterine application of electricity to be absolutely irrational.

ZWEIFEL (Leipzig) read a paper on

THE ELECTROLYTIC TREATMENT OF MYOMA.

According to the laws of physics, the effect of the galvanic current, by reason of its decomposing action on water, is this, that acids form at the positive pole, alkalies at the negative pole; thus the sodium chloride of the tissues is decomposed, the chlorine forming at the anode, the sodium at the cathode. The sodium combines with water to form caustic soda. To this chemical effect is added in the living tissues a cataphoric effect which determines a flow of fluids from the anode to the

cathode. A third is the physiological vaso-motor effect—first contraction, then dilatation of the vessels. The fourth effect, the direct electrical irritation, is sought to be entirely overcome by graduated increase of the current strength by means of rheostats.

Galvanolysis of uterine myomata is best effected by large external plate electrodes in order to diminish the pain—the electrodes are simply covered with wet cotton—and by internal intra-uterine sounds, which should be made of non-oxidizable metal. The current strength of more than 100 milliamperes, according to Zweifel, is exceedingly painful even at the positive electrode, but the patient soon becomes habituated to the pain. He uses from 150 or 175 to 200 milliamperes; each sitting lasts five to eight minutes, and is repeated once or twice a week.

The galvanolytic treatment of myomata is not dangerous when the application is intra-uterine and in the absence of acute inflammation. The treatment, however, is not radical, but rather symptomatic; for a complete disappearance of the tumors has not been observed. Zweifel has noticed a shrinking of the tumors, but after cessation of the treatment they began to grow again. However, in the majority, especially in older patients, the shrinking seems to persist. The symptoms of incarceration of the myomata diminish under treatment; the hemorrhages are lessened by the application of the anode in the uterus and increased by the cathode; but the treatment does not always avail in profuse hemorrhages. The subjective sensations of the patients are improved. Zweifel is decidedly opposed to the galvano-puncture of the tumors.

GUBAROFF (Moscow) has often employed currents of 600 milliamperes for ten minutes, and has observed complete softening of the mucous membrane in consequence. The length of the application must always be regulated according to the constitution. Intra-uterine galvanolysis is to be specially recommended in interstitial and submucous myomata. In intraligamentous tumors galvano-puncture is to be employed. The pains and other inconveniences of myomata can be removed by the galvanic current without serious danger. In inflammatory alterations of the uterus the faradic current removes the pains; the galvanic current of a strength of 250 milliamperes does the same. In carcinoma Gubaroff employs 1,000 milliamperes and has never observed any ill effect from it. For large doses of galvanism Gubaroff has at times employed chloroform. A great drawback in the treatment is the presence of adhesions. In one case a retained placenta has been destroyed by 250 milliamperes. In electricity we possess the only reliable means by which an extra-uterine fetus can be

destroyed, and it forms at the same time a preparation for laparotomy. Electricity can also be employed in dyspareunia and vaginismus.

MCGINNIS (New York) has obtained good results in dysmenorrhea and menorrhagia due to stenosis. He spoke strongly in favor of electricity. Cases of sterility have likewise been cured by it and pregnancy has followed.

ENGELMANN (St. Louis).—The cases must be selected, and in such the effect will come up to expectations.

BROESE (Berlin) has observed an indubitable diminution of the tumors by the galvanic current in two cases. One case was an interstitial myoma; the concomitant dysmenorrhea was great. The tumor had completely disappeared from the abdomen and could only be demonstrated by combined examination. In the second case similar results were observed. Broese lays down the following principles with reference to galvanic treatment: The physician who employs it must be competent to make a diagnosis and must be familiar with physics and electricity. The vaginal ball electrode for strong currents is to be rejected, as it produces deep ulcers in the vagina. Patience is necessary for both parties. Several months up to nine will pass before a palpable result will be obtained. All sorts of accidents occur in the meantime, slight hemorrhage, some perimetritic irritation, but often success crowns the efforts. The greater the depth of the uterine cavity the more difficult is the cure of the hemorrhages; when it measures more than 12 cm. one must consider whether to allow the hemorrhage to continue three or four months longer. Sometimes the effect is manifested only weeks after the cessation of the applications. The galvanic treatment is to be preferred to other medicinal and surgical procedures; possibly a combination of curetting with intra-uterine electrolysis may prove useful.

Electrolysis also acts excellently in chronic pelvic exudations. Water, and not a saline solution, should be used for moistening the electrodes. The pains from the galvanic treatment were not very great. Broese believes that we are greatly indebted to Apostoli, who has made the electrical treatment a method rich in the most beneficent results.

EPHRAIM CUTTER (New York) read a paper on

ELECTROLYSIS OF MYOMATA.¹

¹ See page 1083.

TWELFTH SESSION, AUGUST 8TH, 3 P.M.

PROF. WILLIAMS (*London*) in the Chair.MURPHY (*Sunderland*) read a paper on

THE TREATMENT OF PLACENTA PREVIA.

He gave a detailed synopsis of forty-two cases of placenta previa that had come under his care. He especially recommended Barnes' method, which consists in early dilatation of the cervix with Barnes' colpeurynter, and loosening of the lower portion of the placenta as far as it is attached to the lower uterine segment. In all cases the hemorrhage ceased completely or became insignificant as soon as the placenta was sufficiently detached. In some cases the cervix was simply dilated with the fingers. Only two of the mothers died. In one case death was due to septicemia after ten days; in the other to exhaustion a few hours after labor. Of the children twenty were born alive. In one case in which the child was born alive the conjugate was contracted; in all former labors version had been performed and only one child had been born alive. One patient had had placenta previa in a former labor; in another the same condition recurred in a subsequent pregnancy. One was a case of twins who were born dead. Barnes has described his method in 1889 in the *British Medical Journal*.

HALBERTSMA (*Groningen*) read a paper on

THE PROGNOSIS OF ECLAMPSIA.

He referred to Stumpf's communications. In his own cases Halbertsma had a mortality of 17 per cent of the mothers, 77 per cent of the children; 3 women died undelivered. In view of these results we are called upon to consider whether it is not possible to save more mothers and children. Halbertsma mentioned a case of Cesarean section in the last stage of eclampsia, in which the child was saved. In eclampsia in which no pains were present, Halbertsma has performed Cesarean section in order to save both mother and child. In another case, too, the result was good for both. In Holland Cesarean section has been performed six times in eclampsia; only one of the mothers died, and one child, born at the beginning of the eighth month, died soon after delivery. The operation had also a good effect on the convulsions. In one case three slight attacks occurred subsequently. Hence this operation had put an end to the convulsions. The verdict on this active mode of treatment will vary. Injections of morphine

(J. Veit) also give good results; Veit had never lost a case from eclampsia. Of the ten cases of Cesarean section thus far published, two died; it is possible that this operation is more dangerous during pregnancy because the pains have not yet set in and hemorrhage may be more profuse. Halbertsma also spoke of the method by incision of the cervix, recommended by Duehrssen and Skutsch. This may also be done during pregnancy. It is not possible to give exact indications how long narcotics and hot baths may be continued.

WINTER (Berlin) read a paper on

THE TREATMENT OF ABORTION.

The course of the abortion must be accurately known, and the amount of decidua left behind should be determined. Winter has subjected 100 cases to study; Dr. Pappe had examined them and inspected the placenta. The investigation included only cases in which positively all portions of the ovum could be delivered to the physician. In nine cases the uterus had completely emptied itself and there was no subsequent endometritis. Not quite at the same level with reference to complete removal of the decidua were the curetted cases. The first menstruation in them was usually profuse, the latter ones normal. In the second group of cases the entire decidua had remained behind, firmly adherent to the uterine wall. Fifteen such cases were observed. In all cases the finger determined the firm adhesion of the decidua. The course of the puerperium was surprising. The lochia lasted usually from six to eight days; they were not profuse or decomposed. The menses recurred uniformly after six weeks and lasted from two to eight days; the subsequent periods became less profuse. These facts prove that in healthy women the retention of the decidua produces no disturbances, and that a normal endometrium soon forms from it. The condition usually met with in practice was represented by those cases in which a portion passes away and a portion remains behind in shreds or partly detached. The shreds were removed in the treatment, so that the uterus was smooth. This mode of treatment was employed in 30 cases. The lochia lasted eight days, were not profuse or decomposed. Menses recurred after four weeks, and the later periods were likewise normal. In 12 of these cases conception again occurred within a few months, which would seem to indicate that the retention of the placenta causes no disturbance. Furthermore, 20 cases of hemorrhage after abortion and subinvolution were observed; all of them had formerly been healthy, in all the abortion had terminated spontaneously, and in 16 cases the material removed by the curette was care-

fully examined. After miscarriage in the second month only decidua was found. In the earlier months hemorrhages are easily caused by retention. How should the result of the first and second series be reconciled? When chorionic villi remain behind, the involution of the uterus is bad and hemorrhages continue for some time; but often the transformation of the decidua into endometrium proceeds with disturbances. The shreds which depend half detached into the uterus keep up continual hyperemia and prevent complete involution. The retention of such shreds occurs most readily when the vera tears. Still Winter had observed no disturbances in the thirty cases because the shreds were removed. The result as to the treatment is, the decidua vera can be left undisturbed, only loose shreds should be removed.

FOCHIER (Lyons) exhibited

A MODIFICATION OF THE FORCEPS,

by which effective downward traction is made possible. He also showed an instrument specially devised for puncture of the posterior vaginal vault.

AUVARD (Paris) read a paper on

TAMPONADE OF THE UTERUS.

Tamponade of the uterus in gynecology and in obstetrics should be kept strictly apart. For its performance the cervix is drawn down with two bullet forceps; the uterus, fornix, and vagina are completely filled. The tampons remain only for a few hours. Doléris has employed the same procedure at the Charité in Paris in two cases with good results. It is a powerful hemostatic measure. Auvard has used it in 67 cases, with a mortality of 6 per cent; 3 of syncope, 1 of septicemia, 1 of eclampsia.

DUEHRSEN (Berlin).—Besides Auvard, Pasquale and Fochier have likewise warmly advocated Duehrssen's method. In the tamponade of the utero-vaginal canal we possess a reliable and harmless hemostatic measure, the most certain of all in hemorrhage from atony and laceration. Of late Duehrssen has tamponed with sterilized gauze. For this purpose he uses a double box, the inner of which is filled with gauze and sterilized with a current of steam. Tamponade has passed through its baptism of fire in Germany and largely in foreign countries. In only four cases did it fail to arrest the hemorrhage; in one the tamponade was too loose, the other three were cases of placenta previa. In all cases of hemorrhage from the lower uterine segment, the lower portion of the vagina should be filled with the less pervious cotton. Should

the hemorrhage then become internal and the uterus become distended—an accident never observed by Duclirssen—it can easily be overcome by pressing the uterus against the tampon within it. Success alone sanctifies the means. In reply to Olshausen he would state that the tamponade is recognized as a harmless measure not only in Germany, but also in England and elsewhere. By no means should the uterus be inverted and constricted, as has been proposed, in cases of hemorrhage.

VON RAMDOHR (New York) has employed the tamponade four times after all other means had been exhausted and the women were almost moribund. In ten other cases the same experience was had. All his colleagues in New York were fully in accord with this method.

THIRTEENTH SESSION, AUGUST 9TH, 8 A.M.

PROF. WINCKEL (*Munich*) in the Chair.

ENGSTRÖM (Helsingfors) read a paper on

THE ETIOLOGY OF MYOMA OF THE UTERUS.

Myomata of the uterus are products of irritation. They stand in connection with menstrual congestion. For (1) there are no congenital myomata; (2) they never arise after the menopause, but only during sexual activity. But this is not the only etiological factor. Engström believes in a certain heredity. In proof he cited four cases in which two sisters were suffering from myomata, and in two others the mother was likewise affected.

EPHRAIM CUTTER (New York) read a paper on

FOOD AS A MEDICINE IN UTERINE FIBROIDS.

In October, 1877, he published in this JOURNAL a series of cases treated by a diet of meat and hot water according to the Salisbury system. All of these cases are now alive and well. The growth of myomata is caused by an imperfect action of the normal tissue metabolism. To remedy this the systemic power must be improved or restored by: (a) Proper feeding, hygiene, tonic medicine; (b) Stopping useless expenditure of nerve force in work, worry, or pleasure; (c) Conferment of force by massage, horse exercise, etc.; (d) Inspiration and hope; (e) Galvanism in certain cases.

EASTMAN (Indianapolis) exhibited an instrument for the removal of uterine fibroids.

Fritsch (Breslau) read a paper on

MYOMOTOMY.

There are different methods of treating myomata. Castration, in the first place, is indicated when the patient is too weak to bear a graver operation, or when the myoma is still small. However, the cure after castration is not always definitive. In two cases Fritsch has been obliged to perform laparo-myomotomies subsequently because the hemorrhages did not cease.

Enucleation of the myomata from the uterine parenchyma—an operation for which we are indebted to A. Martin—is sometimes indicated. In this operation we must seriously consider whether the principle of the conservative method is to be maintained. For if, owing to the extent of the operation, future impregnation of the woman is no longer possible, it is unnecessary to preserve the organ, as it is useless. Besides, we cannot exclude the possibility of a subsequent development in the same patient of additional myomata from small germs which did not manifest themselves during the operation. For this reason Fritsch would perform enucleation only in cases in which the tumor lies close under the peritoneum—that is to say, where we have no longer to deal with subperitoneal myomata sessile on a broad base.

As regards hysterectomy, the different methods of operation are immaterial in view of the question whether the mode is to be intraperitoneal or extraperitoneal. Fritsch looks upon his method as an extraperitoneal one. He has thus far performed 87 laparo-myomotomies, 60 of them according to his method, of whom he has lost 8. Having had such good results, Fritsch believes himself justified in adhering to his method, although he admits that it needs to be perfected technically. On principle it is probably more correct to remove the entire uterus with its cervix.

Boisieux (Paris) read a paper on

MYOMOTOMY.

In ten cases of supravaginal amputation of the uterus performed in A. Martin's clinic at Berlin, Boisieux has examined the mucosa both of the body and the cervix for the presence of micro-organisms. Having found twice in the body and seven times in the cervix microbes which proved fatal in two instances to animals inoculated with them, he urgently advises to cauterize the cervical stump thoroughly with the thermo-cautery in all cases in which the stump is to be treated intraperitoneally.

With reference to the question of asepsis and antisepsis in

laparatomies, Boisleux advises to operate aseptically only in ovarian cysts and extra-uterine pregnancies, because they are sterile *per se*; but antiseptically—that is to say, with the use of antiseptic drugs—in myomata, malignant tumors, pyosalpinx, ovarian abscess, and pelvic abscess. In all such cases the antiseptic fluid employed is to prevent the further development of the germs.

EDEBOHLS (New York) spoke on

ALEXANDER'S OPERATION.

He explained a modification devised by him of the Alexander-Adams operation of shortening the round ligaments. In nearly all cases he has observed very good results.

ARENDT (Berlin) read a paper on

THE CONTRACTILE POWER OF THE UTERUS AND ITS PRACTICAL UTILIZATION.

Uterine contractions occur on the slightest touch of the organ during any diagnostic examination. During the action of strong irritations, such as massage of the uterus or displacement of the organ upward or sidewise, these contractions increase to the hardness of a fibroma. At the same time the uterus becomes strongly anteverted and smaller. The duration of the contraction depends upon the nature of the uterine tissue. This mechanically evoked contraction can be employed therapeutically in metritis, endometritis, subinvolution, hyperemia, and in some cases of retroflexion. When the erection of a retroflexed uterus is rendered difficult through softness of the isthmus, massage of the region of the external os can be performed from the rectum and the abdominal walls; thereby the uterus becomes hard, the isthmus firm, and the reposition is facilitated.

L. MEYER (Copenhagen) read a paper on

THE ARTIFICIAL ENGAGEMENT OF THE DEVIATED OCCIPUT.

The long delay caused in labor by the wrong engagement of the small fontanelle posteriorly, and which can only be corrected with great difficulty by the corresponding application of the forceps in the manner recommended by Lange and Scanzoni, has induced Meyer to devise another method for this complication. He found that by external pressure the small fontanelle moved downward and forward, and that on relaxing this pressure it returned to the posterior position. By having this external pressure performed by an assistant, and supporting it from within, he succeeded in bringing the small fontanelle farther forward with the hand, and, after fixing the head in this position by the external pressure and applying

the forceps, in terminating the labor with the small fontanelle directed forward. In this way he has happily delivered four cases.

DOMBROWSKI (Moscow) exhibited a very large

DERMOID CYST

which had caused great difficulties, during operation, by many adhesions. After removal the cyst was found to contain a great mass of bone formed exactly like a pelvis.

BOSSI (Genoa) described

AN INSTRUMENT FOR THE PRODUCTION OF ARTIFICIAL ABORTION in suitable cases. It is introduced into the cervix, which it forcibly dilates by the action of a screw.

LE TORRE (Rome) exhibited a

DILATOR FOR STENOSIS OF THE UPPER THIRD OF THE VAGINA, which he had employed with good results after all other attempts had proved fruitless. The instrument consists of an olive-shaped bulb with a handle. By the action of a screw in the handle the bulb expands greatly and thus dilates the stenosis.

The president, PROF. WINCKEL, closed the sessions with a vote of thanks to Dr. A. Martin, who had directed the sessions of the section in a most careful and amiable manner.

TRANSACTIONS OF THE OBSTETRICAL AND GYNECOLOGICAL SOCIETY OF WASHINGTON.

Stated Meeting, January 17th, 1890.

DR. J. TABER JOHNSON, *President, in the Chair.*

DR. T. C. Smith read the paper of the evening, entitled

CASES IN PRACTICE.¹

In the absence of Dr. Prentiss, who had been appointed to open the discussion, the President called upon Dr. H. L. E. Johnson.

DR. H. L. E. JOHNSON said he thought that the diagnosis in the first case might be questioned as one of erysipelas; from

¹ See original article, page 1076.

the history given and the rapid recovery after the evacuation of such a quantity of pus, it might have been entirely due to the burrowing of an abscess. This peculiar condition of the integument is often caused by pus burrowing. The second case was certainly an unusual one, if it was not one of extra-uterine pregnancy. The treatment, considering a possible doubt in diagnosis, he would not discuss. In the case of hemorrhage from the vagina, he could not see how a vagina could be so torn by any syringe. It would require considerable force to inflict such an injury, and the pain necessarily produced would have been a guide to the patient to discontinue the force or pressure. The vagina is tough, and when we remember the force exerted upon it by the head during parturition, and the use of instruments without causing lacerations, he could not believe this injury to be so inflicted. He hardly thought the examination made by Dr. Smith was sufficient, considering the amount of hemorrhage; also whether a tampon was proper treatment, especially when the hemorrhage was not in the least controlled. He should have examined the case thoroughly, and discovered the cause of the bleeding, and then given the treatment indicated.

DR. BUSEY asked Dr. Johnson what he would consider proper treatment.

DR. JOHNSON replied that a thorough examination should have been made, and the wound should have been brought together by a suture. He certainly would not have introduced persulphate of iron into a wound, which might probably produce sloughing into the peritoneal cavity.

DR. THOMPSON, being asked his opinion of the cases reported, said he considered the first case reported undoubtedly one of erysipelas, as diagnosed by Dr. Smith, and not due to the burrowing of an abscess.

He spoke of a case, similar to the one reported, upon which he had operated yesterday, and from which he removed large masses of sloughing tissue. Fluctuation in these cases is not always possible, on account of infiltration of tissue supervening; he thought it hardly probable that the pus formed in twenty-four hours, as stated, but was not discovered before.

In reference to the second case, in general surgery he prefers to evacuate large collections of blood by the aspirator, rather than leave them to the slow process of absorption. In hematocele (pelvic), when diagnosis is early made, he thinks the plan by vaginal puncture would be preferable to waiting.

He thought the treatment of the case of vaginal hemorrhage was the one that would have been generally followed. Whereas he did not generally favor astringents, he considered it good practice in such cases as the one reported.

He would say that one would find it extremely difficult to apply a ligature in such a position in so deep a vagina.

Dr. H. L. E. JOHNSON said that the difficulty of making a diagnosis is not an excuse for not making it, but all the more cause for searching. When it was found that hemorrhage continued notwithstanding the tampon, which generally checks a much more severe hemorrhage than this, he thinks a very careful examination should have been made at once. The tampon will in severe cases, when properly introduced, check all external hemorrhage, preventing all escape, and even cause the blood to be retained until sufficient has escaped to cause great distention of the uterus.

The cause for greater search was indicated, for after the introduction of the tampon the flow was so severe that, as Dr. Smith states, the woman was ill from loss of blood, and so ill that he had to see her to her home. The injury must have been inflicted upon some deep-seated vessel, for after quite extensive laceration there is generally very little hemorrhage.

Dr. SMITH.—In answer to the criticisms of Dr. Johnson, it may be said that the cases reported were of interest to me because of their unusual character. The report does not enter into that painful detail of symptoms and methods of treatment which would only have served for "padding." The salient points were noted, and the reasons for considering the matters interesting were duly given. Dr. Johnson's agnosticism makes it difficult to reply to him. He doubts the correctness of the diagnosis in the first case, and says the condition of the skin might have been due to pus burrowing. I deny the correctness of the explanation, and differ with him in the statement that such a condition of the integument as that described as occurring in my patient "is often caused by pus burrowing." When he can cite such a case it will be time enough to consider the necessity for making a differential diagnosis. But Dr. Thompson has already sufficiently answered the doctor's criticism. Then, again, the doctor, by implication, assumes that the second case (hematocele) might have been one of extra-uterine pregnancy. He gives no reason for his belief. I have already stated that no occasion existed for making a differential examination in order to exclude the question of ectopic gestation; it is, therefore, unnecessary to say anything further on that point.

Concerning the case of vaginal hemorrhage the doctor is even more at sea than ever. He says he cannot believe the injury to have been inflicted in the manner indicated. I answer by saying that the lady's statement is entitled to entire indorsement, notwithstanding the doctor's incredulity. He fails to state any other manner in which the injury might

have been inflicted. It was a matter of surprise to me that such a lesion, followed by so severe a hemorrhage, could have been received without the infliction of more pain, and that was stated as an interesting point in the case. In relation to the sufficiency of the examinations made by me at my office and elsewhere, it is only necessary to say that the investigations were as complete as the case seemed to call for, and the finding of the "punched" opening in the vaginal fornix was unexpected, having in view the absence of a history of traumatism sufficient to injure the vaginal wall. The patient's statement that she had only recovered from her menstrual period during the preceding week, and that on introducing the nozzle of the syringe she had experienced some pain from the contact of the point with the vagina, induced me to believe that the hemorrhage was only a return of the menses, as already stated. It was believed that the tampon would check the hemorrhage, but it failed to do so, and this occasioned me some annoyance. The doctor questions whether the treatment by tampon was correct, inasmuch as it had failed to control the flow. In answer I would say that the use of the tampon was correct, whether it controlled the hemorrhage or not. The cotton introduced before the lady left my office was not packed tightly: that placed in the vagina after reaching her house was securely fixed. When it was found, three hours later, that the hemorrhage had returned, further investigation revealed the cause, and the application of the Monsel's solution, fortified by another tampon, effectually arrested the flow. Dr. Johnson makes a remarkable statement concerning the tampon. He says the tampon will in severe cases, when properly introduced, check hemorrhage, and even cause the blood to be retained until it causes great distention of the uterus. It has never been my fortune to read of a case where the uterus was distended by retained blood after the use of a tampon to correct a vaginal hemorrhage, nor do I believe any one else has ever met with such a case. I believe the use of the iron solution in this case was proper. I do not believe Dr. Johnson or any other physician would have tried to suture the wound in the vagina of my patient, if the case had fallen into his hands.

ABSTRACTS.

1. FEHLING, H.: SOME REMARKS ON THE ETIOLOGY OF MYOMATA AND THE METHOD OF MYOMOTOMY (*Centralbl. f. Gyn.*, July 19th, 1890).—The author has always contended that, contrary to prevailing opinion, unmarried women were more subject to myomata than those married. Of 189 cases of myomata at the Basle clinic, 65.6 per cent were married and 34.4 per cent single, or 2 to 1; in the general population there are, however, 3 married women to 1 single woman of ages varying from 21 to 60 years; between 30 and 50 years there are 3.4 married to 1 single. He feels certain that a similar proportion obtains with other localities. It is obvious that the uninterrupted menstruation should favor the development of myomata. As regards the operative technique, he seeks to shorten the period of recovery by cutting off the stump close to the rubber ligature between the fourteenth and twenty-first days; if the ligature be closely hugged on cutting there is no danger of secondary hemorrhage. As soon as the wound is clear and united in its lower portions, he proceeds to the secondary suturing of the abdominal coverings, which are left ununited at the primary operation, avoiding the peritoneum. The wound, after it and the surrounding skin are disinfected, is scraped out, the borders of the skin wound freshened, and the abdominal wound closed by deep and superficial silver sutures. A thin drain is placed in the cervical region. Healing is essentially hastened.

L. R.

2. SIPPET, A.: CASTRATION IN OSTEOMALACIA (*Centralbl. f. Gyn.*, No. 33, 1890).—The author gives the history of a case of osteomalacia in which castration effected a cure. The patient was 36 years old, and since a miscarriage between the fourth and fifth labors, which was accompanied by profuse hemorrhage, suffered from osteomalacia. The vertebræ were distorted: the pelvic bones were so greatly bent that a finger could not be pushed between the symphysis. There were profuse menstruation and constant pains. At the operation the conjugate was found so narrowed as to preclude the admission of two fingers. The patient was discharged four weeks later. The bleedings ceased; the pains persisted during the first weeks, but gradually subsided and eventually ceased. Patient feels perfectly well, and is able to pursue her usual avocations. The operation was performed mainly because of the profuse

bleedings, and the author believes that the cure was probably in some measure due to the cessation of the loss of blood.

L. R.

3 FALK, E.: THE UTERINE ANTROPHORE (*Centralbl. f. Gyn.*, No. 33, 1890).—At the suggestion of Dr. Landau, the author experimented with antrophores, used for some time for the male urethra, modified so that they could be utilized in intra-uterine medication. The vagina and portio were first disinfected, and the antrophore introduced by a pair of forceps through a cylindrical speculum without dilating the cervical canal; the instrument was left *in situ* for ten minutes, and then the spiral was removed, the medicament having by this time been thoroughly dissolved. Positive dosage may be had with this instrument. In fungoid endometritis antrophores with zinc chloride (1 per cent), cupric sulphate (0.3 to 1 per cent), resorcin (10 per cent), tannin (5 to 10 per cent), were found the most efficacious; while in gonorrheal endometritis sublimate (0.1 per cent), creasote (2 per cent), and especially sublimate (0.1 per cent) with zinc chloride (1 per cent), were found useful. As zinc chloride, resorcin, and creasote produced uterine colic, the antrophores were coated with a layer of cocaine, with which the procedure was painless. The author will report more in extenso at a later date.

L. R.

4. BROBIN: EXTERNAL VERSION WITH THE SECOND TWIN (*Centralbl. f. Gyn.*, No. 36, 1890).—B. contends that internal version can always be avoided with the second twin; if the membranes are intact and the pelvis normal, external version ought never to fail. The birth of the first child has prepared the parturient canal for the exit of the second; if the membranes have ruptured, success may still be achieved as long as violent pains have not wedged the shoulder into the pelvis. External version possesses the advantage of minimizing the danger of infection.

L. R.

5. ELBING, R.: A LITHOPEDION IN THE RUDIMENTARY HORN OF A UTERUS BICORNIS COMPLICATED WITH PREGNANCY OF THE OTHER HORN (*St. Petersburger Med. Wochen.*, No. 33, 1890).—The patient, a peasant woman, had been delivered by a midwife, but, as the latter had diagnosticated twin pregnancy, the author was called in consultation. During her previous and first pregnancy the abdomen was remarkably enlarged and fetal movements were felt on both sides, those on the left side, however, ceasing toward the end of pregnancy; her labor was normal, but the enlargement of the abdomen persisted, and was accompanied by burning pains in the left side of the abdomen, which disappeared about seven weeks afterwards; the pain

was accompanied by fever. The second pregnancy was normal. When the author arrived one child was born; the placenta had not yet come away; the abdomen was still enlarged, fetal parts palpable in the left hypochondrium; they felt very hard, and no heart sounds or fetal movements could be made out. The placenta was removed without much bleeding. On internal examination it was found that the os was patent for four fingers, the cervical canal was long and was reduplicated toward the internal os in a direction toward the right and upward, and provided at its left wall by a furrow about 0.5 cm. in depth and 5 cm. long, reaching beyond the internal os; further examination revealed the right horn of the uterus, which had been emptied of its contents. Apart from the described furrow in the left cervical wall, no trace of the other pregnant horn could be felt; the fetal parts could not be palpated because of their high position; but a thickened cord, taken to be the obliterated cervical canal of the left horn, could be felt. The puerperium proceeded normally; the lithopedion occupied a transverse position six weeks afterwards, the breech presenting to the left and reaching to the hypochondrium; the right horn was well restored and lay to the right in the pelvis. Mother and child did well.

L. R.

6. LANDAU, TH.: SOME ANOMALIES OF SECRETION OF THE MAMMARY GLANDS (*Deutsche Med. Wochen.*, August 14th, 1890). —After referring to the repeatedly observed phenomena, in the animal and human subject, in which the male glands secreted milk copiously, L. lays stress upon the importance of recognizing not only the qualitative fluctuations in the milk of nursing women, but also the great difference which frequently exists between the milk secreted by the two glands in the same individual; he has seen cases in which the secretion from one breast was sweet, that of the other being just as copious and rich, but having a salt taste. Diseased conditions of the subject have a powerful influence upon the character of the secretion, yet it is not so profoundly altered as not to be termed milk in a chemical sense. With vicarious menstruation the most pronounced changes take place. One case under the observation of L. Landau has monthly flows of blood from both mammæ. The appearance of abnormal secretion from the mammary glands must be regarded as of evil import, not infrequently constituting a symptom of malignant growth in the gland. Three cases were observed by the author in which abnormal secretion took place from *one* breast in women at the menopause. In one the patient found that every morning the night dress was soiled on the left side of the chest with what she supposed was "matter"; shortly before and during the

menstruation the secretion became more copious; gradually the originally yellowish-white fluid became darker, and was finally dull black. Her physician injected some substance—probably iodine tincture—which caused the secretion to cease for two weeks, only to reappear with wonted characteristics. The left breast was uniformly softer than the right. Microscopically, the fluid was seen to contain numerous blood discs, colostrum bodies, free fat globules, and a few lymphoid cells; epithelial cells and crystals were wanting. Reaction was neutral. It was concluded that the fluid was a mixture of milk with some blood. Patient's health was excellent. A compression bandage was placed over the breast; three days later there was not a drop of the fluid secreted. He considered this case simply one of late lactation; it may be that through the congestion of the gland its vessels became engorged, and that blood discs found their way into the milk channels by diapedesis through the lymphatics. The bandaging caused the spontaneous flow of the fluid to cease.

L. R.

7. KOCKS, J.: TREATMENT OF CHRONIC TOTAL UTERINE INVERSION (*Centralbl. f. Gyn.*, No. 37, 1890).—The author makes favorable mention of the expedient of Kézimárszky and Bársöny, by means of which the colpeurynter is reinforced by tampons of iodoform gauze, but claims superior advantages for his own "globe-funnel" tampon of rubber, in that it exerts pressure upon the inverted organ both by lateral and axial pressure simultaneously. The instrument of K. is a globe-shaped colpeurynter, which has a funnel-shaped depression at its summit, into which the inverted uterus fits. Upon being filled the colpeurynter first distends the vaginal wall, then exercises even pressure laterally and from below upon the inverted organ, and finally, under increased pressure, pushes it up so that the former funnel-shaped cavity is converted into a pyramidal expansion of the colpeurynter; this presses into the cervix and causes complete reposition of the organ. In one case, of 16 months' standing, this instrument produced this effect with astonishing promptness. He claims that the instrument is also valuable as a hemostatic in cases of placenta previa with patulous cervix, as an exciter of contractions in artificial labor, and for other therapeutic uses.

L. R.

8. BENICKE: PROLAPSE OF THE URETHRAL MUCOUS MEMBRANE IN YOUNG GIRLS (*Zeitsch. f. Geburts. u. Gyn.*, xix., 2).—Three cases of this rare trouble were reported by B. before the Society of Obstetricians and Gynecologists of Berlin. The first was a girl 11 years old, anemic, delicate, and small. Irregular bleedings had taken place from the genitals for some time; there was no pain on micturition, no tenesmus, no

mucous or purulent discharge from the vagina. There was a projection at the meatus urinarius about as large as a bean, of dark-red color, bleeding on touch. The left wall was more prolapsed than the right. The protrusion was touched lightly with a fine cautery and lead-water compresses applied. Good recovery followed. In the second case there was a protrusion as large as a walnut between the clitoris and introitus; the urethra was widely dilated, so that the finger could readily enter. The mother positively denied that the girl—10 years old—masturbated. A catgut suture was passed transversely through at the border of the lower third of the meatus and tied; the prolapse did not come down. The lower portion of the urethra was touched with a two-per-cent solution of cupric sulphate during the next days, and complete recovery took place. In the third case the diagnosis was at first not made, and the 10-year-old girl was unsuccessfully treated for six weeks before the condition was recognized; reposition was impossible, and the prolapsed mucous membrane was excised; good result followed.

Regarding the diagnosis, one is at first inclined to consider such cases as new-growths, but careful examination under anesthesia will clear up the matter. The symptoms of the trouble are astonishingly moderate. In the three cases cited there was no painful micturition. The etiology is not very clear; children of poor constitution are more prone to the trouble; irritation of the urethra and catarrh of the latter are considered causes, as well as protracted cough, as in pertussis.

L. R.

9. HASSE, C., AND V. ZAKREWSKI: THE HUMAN PELVIS AND THE NORMAL FETAL POSITION DURING LABOR (*Zeitsch. f. Geburts. u. Gynäk.*, xix., 1).—It had been previously noted by Hasse that with the normal right-sided deflection of the vertebræ the right ilium not only was on a deeper plane, but that also the right half of the pelvic inlet in such cases was flatter, the left more distorted, and that further moderate differences obtain in the length of the diagonal diameters in favor of the right. If the lateral deviation of the vertebræ is to the left, the opposite condition results. These facts have some import regarding the presentation and labor. With a view toward determining what effect this had upon inducing the first cephalic presentation, the authors proceeded as follows: Women were examined who had given birth one or more times, whose pelvis presented no immoderate irregularities or diseased changes. The nude figure was placed in a perfectly straight position, the hands resting lightly against the thighs, the heels in apposition, and the feet turned outward; the deviation of the vertebræ was then made out, the distance be-

tween the two anterior superior iliac spines measured, and the distance between them and the surface occupied by the heels also determined. According to whether there was right- or left-sided deviation of the pelvic halves the diagnosis of the first or second cephalic position was made, and this was compared with the course of labor and the position of the fetus. Altogether 164 women with asymmetrical characteristics were examined; of these, in 100 there was deflection of the vertebrae to the right, and therefore a deflection of the symphysis to the left, as well as a prominence and lowered plane of the right half of the pelvis and a shorter right lower extremity; the remaining 64 were scoliotic on the left side, and presented these relationships reversed. In addition, 20 women were examined in whom no deflection of the spine or asymmetrical pelvis and lower extremities could be discovered. In 62 of the 100 left scoliotic women, the difference in the plane of the anterior superior iliac spines was from 1 to 2 cm.; in the remainder, in whom spinal deviation was very moderate, the difference was only from 0.4 cm. to 0.8 cm. As regards the diagnosis of the first cephalic position, this was found correct in 70 cases. At the same time it was found that with pronounced scoliosis 40 correct and 22 erroneous diagnoses were made, while with moderate lateral deflection there were but 8 false to 30 correct diagnoses; of the 64 women with left-sided deviation, there were 21 correct and 43 false diagnoses made; of the 20 women without visible asymmetry, 18 were confined with the child in the first cephalic position, 2 in the second. These results show that the causes of the cephalic presentation do not lie solely in asymmetrical conditions of the pelvis, but, on the other hand, that it would be irrational to underrate this factor in its influence upon the position of the gravid uterus, the fetal head, and labor. A number of diagrams are given by the authors to demonstrate exhaustively the asymmetrical forms of pelvis and the differences which ensue between the right and left halves. The cause for the predominance of the first cephalic position, the authors state, is the situation of the rectum to the left side and the position of the uterus dependent upon this, and in the configuration of the entire pelvis.

L. R.

10. KLEIN, GUSTAV: THE ACTION OF THE CONSTANT CURRENT UPON MYOMATA (*Zeitsch. f. Geburts. u. Gynäk.*, xix., 1).—The action of the constant current was noted upon myomata recently removed from the living subject; a current of 100 milliamperes, lasting from five to sixty minutes, gave the following action: 1. A chemical action, by the agency of acids at the positive and alkalies at the negative pole. This appears to be the most important action. 2. An electrolytic action (a

chemical decomposition, made obvious by the copious development of gases). 3. A thermic action; the temperature of the tissues is raised at both poles, in some cases from 10° C. to 14° C. 4. Injury of arteries, veins, and lymphatics, which may be so considerable as to render them entirely inactive. 5. A physiological action upon the muscular fibres of the myoma and its vessels, expressed by contraction and finally relaxation. The microscopical appearances were as follows: The borders of the cells were indistinct at the anode; the protoplasm homogeneous, not swollen; the granules diminished in size and slightly or not at all stained; the lymphatic spaces were often dilated to wide-meshed cavities without formed contents; the connective tissue was more altered than the muscular fibres. At the cathode the intense swelling of the protoplasm was conspicuous; despite the enlargement of the nuclei the former occupied more space than the latter. The nucleoli were very sharply stained. The enlargement of the lymph spaces was even greater than at the anode; here also the connective tissue was more altered than the muscular fibres; interpolar action upon the tissues was not demonstrable. It was apparent from the eleven experiments that the entire myoma (apart from very small tumors) cannot become necrotic by galvanization. The author draws the following practical deductions: If plate, globular, or button electrodes are employed as "active," not "inactive" electrodes, their action is only temporary. One cannot, therefore, expect much from bulbous electrodes directed against myomata through the vagina. Myomata are acted on most energetically by direct puncture with needles or stylets into the tumors. The effect of the anode is then not so far-reaching but stronger than that of the cathode. To attempt to diminish submucous myomata with intra-uterine sounds carries with it the danger that the mucous membrane of the myoma may be denuded, and total necrosis or gangrene result. It is best to employ such needles, etc., for electro-puncture as are coated upon their posterior parts by lacquer, a thin layer of rubber, or any other bad conductor. When such electrodes are plunged into a myoma the isolated part of the needle lies in the vaginal tissue, cervical mucous membrane, etc.; the point of puncture is then not burnt, heals rapidly, and offers less chance for the entrance of bacteria.

L. R.

11. KRAMAR: FIBROMA OF THE CHORION (*Zeitsch. f. Geburtsh. u. Gyn.*, xviii., 2).—The placenta was from a 25-year-old multipara with normal pelvis. During the last pregnancy the patient entered the ward because of the great edema and enlargement of the abdomen, causing much suffering. The abdomen was very tense, measured 109 cm. Individual fetal

parts could not be palpated. The urine contained traces of albumin, granular casts, a few white and red blood corpuscles. She gave birth to twins; they originated from two ova. The first and smaller twin was contained in only 410 gm. amniotic fluid; the second, in 6,500 gm. The placenta of the first child was normal and easily separated from that of the second. The latter was markedly thick and broad, measuring 22 cm. in diameter, 6 cm. in thickness; the cord was 44 cm. in length. The amnion could be readily detached. The fetal side projected forward in the middle into a hump. On separating the chorionic villi two tumors were found in the placental tissues, completely surrounded by villi; they were not encapsulated and could be easily removed; they were covered by a thin membrane readily removable. Numerous vessels ran from the chorion to the tumors; their color was uniformly brownish-red, their consistence rather soft. The larger tumor was 6 cm. wide, 8 cm. thick, and 9 cm. long, of irregular form, presenting many small furrows upon the surface, generally traversed by blood vessels. The smaller tumor was 3 cm. wide, 2 cm. thick, and 5 cm. long; it was kidney-shaped and presented at the centre a deep cut, as well as several shallow furrows. Microscopically chorionic villi could be seen at various places. Roundish, oval, and oblong nuclei were everywhere visible in the cloudy ground substance. Cells could be made out with difficulty; a thin layer of connective tissue could be seen at the border. The growth was richly supplied with blood vessels, the thick adventitia of which showed connective tissue with sparse nuclei. The picture resembled very much that of a small round-celled sarcoma. There were no etiological factors serviceable. There is a possibility that the hydramnion had some connection with the placental growths.

L. R.

12. KELLER, C.: THE DIAGNOSIS OF SARCOMA OF THE MUCOUS MEMBRANE OF THE CORPUS UTERI (*Zeitsch. f. Geburt. u. Gynäk.*, xx., 1).—Mrs. M., æt. 46, had had eight children, the last in 1882. The menses since then were regular and painless until about July, 1886; irregular bleedings then set in, often lasting four weeks. Since January, 1887, she suffered from continuous bleeding, accompanied frequently by labor-like pains in the abdomen and back; the abdomen gradually enlarged. The portio vaginalis was very large and sharply bent backward; cervix readily admitted a finger, which came in contact with tumor masses which projected from the uterine cavity into the cervix; their points of attachment were not accessible; they were moderately hard, somewhat brittle. The corpus uteri was about the size of a small child's head; it was anteflexed and its consistence hard; adnexa sensitive to

pressure, but not infiltrated. Necrotic shreds hung from the cervical canal. The microscopical examination of a few particles of tissue showed small round-celled sarcoma. The total extirpation per vaginam was difficult because of inability to bring down the large uterus; the lower two-thirds of each ligament was, therefore, first ligated, when it was possible to bring the uterus retroflexed into the vulva, but the upper segment of the right ligament was torn off. As the copious hemorrhage did not cease after ligation and severing of the left ligament, the aorta was compressed by tampons in the vagina, and laparotomy rapidly begun. Small quantity of blood in the abdomen; a spurting vessel of the right ligament was tied; tampon removed through the abdominal wound, and a drain inserted through the vagina; the wound was then closed. The patient gradually sank, and died on the evening of the second day. Post-mortem examination revealed great anemia and beginning peritonitis. The extirpated uterus was enlarged at the body, the cervix appearing as a small attachment. The body was almost globular in shape; the enlargement in its width was due to an intra-uterine tumor springing from the anterior wall, as large as a goose egg. The *cavum uteri* was 10 cm. long and 5 cm. wide at the tubal orifices. The growth was attached to the anterior wall by a broad base. Microscopically the internal layer of the tumor, that lying toward the uterus, was composed to a moderate depth of endometrium with great proliferation of the interglandular tissue. Glands were only occasionally to be seen; their epithelium was composed of one layer of cylinders possessing a small nucleus; in some glands proliferation of the epithelium could also be seen, composed of numerous layers. The interglandular tissue was composed principally of round cells three times as large as the normal elements of the endometrium, with uniform configuration. At a moderate depth the structure was changed, the glands entirely disappearing. Copious connective tissue with round cells predominated; their nuclei contained nucleoli; the ground substance was completely displaced by the cellular elements. This structure was retained in the growth down to the deepest layers; here the spindle-formed element predominated. In the immediate neighborhood of the blood vessels the spindle cells were parallel to the course of the vessels. Vessels were numerous throughout the growth, their lumina enlarged beyond the normal. The endothelial cells were very much increased; the nuclei were very close, and projected widely into the lumina, giving them a serrated appearance. The growth sent numerous ramifications into the muscular layer, gradually diminishing in size; the muscular elements showed progressive degeneration. Near the periphery the number and size

of the sarcomatous elements became less. The mucous membrane of the intact cavum uteri gave the characteristics of hypertrophic glandular, hyperplastic interstitial endometritis, with fresh exudative inflammation of the superficial layer.

CASE II.—The uterus in this case was obtained by supravaginal amputation per laparotomiam. The cavum uteri was about the size of a man's fist; it was almost globular. The cavity was diminished below the normal; the walls, on the contrary, were greatly thickened (3 to 4 cm.). The internal surface presented irregular, partly knotted, partly polypoid or shred-like protuberances, and had the appearance of gangrenous degeneration. Only the external third of the wall possessed lamellated layers; the rest was absolutely homogeneous. On microscopical examination there was nothing to be seen of mucous lining to the uterus; on the surface there was a true small round-celled sarcoma, possessing the same characteristics as in the previous case.

In the latter case there was a small round-celled sarcoma. The first one possessed the mixed form with spindle-celled sarcoma; in this case only the lowest layer of the mucosa could be considered the starting point.

L. R.

13. SAENGER, M.: TREATMENT OF ENURESIS BY DILATING THE VESICAL SPHINCTER (*Arch. f. Gyn.*, xxxviii., 2).—The technique of the operation is as follows: After cleansing the meatus with cotton, a disinfected metal catheter, preferably a female one, is introduced five to seven centimetres into the bladder, so that its point is about at the ureteral orifices. The tip of the right index finger closes up the mouth of the catheter and holds it quietly in position. The index or middle finger of the other hand is laid upon the catheter at the meatus. This finger then makes forcible pressure, at first downward, then alternately towards both sides. The pressure must be springy, elastic, and powerful, so that the meatus becomes widely open and some urine flows off alongside the catheter. By this pressure not only the sphincter vesicæ but the muscularis of the urethra become strongly stretched. In cases where it is possible to introduce a finger into the vagina, pressure can be made against the catheter. In very sensitive individuals a sound armed with cotton containing cocaine may be first introduced, or the cocaine may be injected directly. In small children a thin sound should be used instead of a catheter. The dilatation is altogether painless. From eight to twelve stretchings should be made in all three directions at a sitting. More than ten or twelve sittings are seldom necessary, at first done twice a day, then on alternate days. The patient is also instructed to gain control over the sphincter, to refrain from fluids as much as possible, and to keep the abdomen warm. The bowels should be regulated.

The patient is also ordered to write down how often she urinates. S. thinks the root of the trouble consists in a weakness or paresis of the vesical sphincter, maybe also a certain tenuity of the muscular bundles. The centre for micturition must also be implicated, but negatively, as the irritation which causes tight closure of the sphincter has but feeble effect upon the centre. In cases where abnormal width of the vesical neck and the whole urethra exists with urethral incontinence, this method is not applicable. Here the artificial narrowing of the urethra is indicated. The involuntary expulsion of urine by multiparous women frequently is due to abnormal width of the vesical neck and urinary channel, besides insufficiency of the sphincter. When not so very extensive, dilatation of the sphincter should be beneficial. L. R.

14. WINTER: A CASE OF PSEUDO-HERMAPHRODITISM (*Zeitsch. f. Geburts. u. Gyn.*, xviii., 2).—The patient was 23 years old, and came to the clinic to inquire why she had not yet menstruated, and whether she could marry; she was baptized as a girl, and employed at feminine work; was always healthy as a child; never menstruated nor had molimina; at about the 16th year she noted an increase in the size of the mammae and in the breadth of the hips, the pubes beginning to sprout several years later. She had occasional sexual desires in the society of men, and had erotic dreams with emissions about every two or three weeks; the subject was always a male, and on awakening she experienced lively longings for cohabitation with a man. During her waking hours she always mastered her sexual sensations, and never masturbated or copulated. She had betrothed herself about four months previously, and from this time on her sexual life developed with greater activity; she noted the expulsion of a viscid fluid accompanied by voluptuous feelings on being caressed or embraced by her betrothed, and a great desire to copulate with the latter came on. She never had any leanings toward the female sex, and said she felt about the same sensations as her female friends. The examination revealed the following: She was of moderate size, rather large-boned, with large hands and feet; the muscles were moderately developed, subcutaneous adipose development slight; the face was somewhat coarse-featured, but distinctly feminine, and in profile made an agreeable, almost pretty impression; there was no trace of beard. She was thoroughly feminine in her manner; was modest and retiring on examination; had long black hair, a broad, slightly projecting larynx; the breasts were very well developed for a virgin; the nipples were retracted. The pelvis was broad, the hips well arched; the symphysis pubis was more pointed than in the female; the abdomen was flat and not hairy; the external genitals resembled at the first glance

a perfect scrotum, only the small cleft opening below pointing to a malformation. The skin of the genitalia and the surroundings was greatly pigmented, and over the scrotum showed distinct transverse corrugations; the corrugations could be intensified by mechanical irritation. Testicles as large as pigeon's eggs were in the two halves of the scrotum; they moved distinctly upward on contraction of the abdominal muscles, but a cremaster reflex was wanting; they could be pushed upward to the inguinal openings, but not through them; the left testicle was more prominent and hung lower; both halves of the scrotum were connected by a distinctly feminine frenulum; at the posterior surface the epididymis could be felt closely applied, the enlarged part lying at the lower pole of the testicle; it continued above into the vas deferens, which could be followed to the inguinal ring with the other constituents of the cord. On holding the scrotal valves apart it could be seen that the internal surface of the latter contained cutis, though slightly pigmented, only the parts in the median line having a mucous membrane character. There was no trace of a penis, only a moderately developed clitoris being found, hardly projecting beyond the level of the surroundings; it was imperforate; the two superior roots were mere folds of mucous membrane, the lower ones having a more prominent aspect from small caruncles. In the middle of this rhomb shaped figure was a small opening, which could be entered by a small sound; the latter glided upward about 0.5 cm. to the clitoris; the import of this small canal could not be discovered. More posteriorly the lateral borders of the unclosed part of the urethra came together as a small projection; this was also imperforate; below this the folds again separated and surrounded the sinus urogenitalis, which was so wide that a finger could enter; the side wall of the latter being drawn upon, the opening into the closed urethra could be seen; the mucous membrane of this part of the sinus was smooth, that corresponding to the vagina showing a more folded mucosa. The closed urethra was 7 cm. long (the cleft portion measuring 2.5 cm.), and traversed around the symphysis with the usual curve. On the closed urethra being drawn widely apart, two symmetrical openings could be seen, several millimetres from the median line and on the posterior wall, which could be penetrated by a sound about 1 cm. backward and outward; he considered them the ductus ejaculatorii. The surroundings of the sinus urogenitalis looked almost like a hymen at the posterior periphery. Examination of the pelvic organs under anesthesia presented the following: The vas deferens of both sides could be distinctly traced from the inguinal ring; both ureters could be felt through the rectum; there was no trace of a prostate; there was no organ resembling the uterus.

L. R.

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ORIGINAL COMMUNICATIONS.

VASO-MOTOR NEUROSES OF PELVIC ORIGIN.

BY

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VASO-MOTOR neuroses are such complex phenomena that it becomes necessary, in order to thoroughly appreciate their action and the results attending them, to hastily, at least, review the anatomy and physiology of the vaso-motor nerves and of the arteries over which they preside.

The arteries are arbitrarily divided into three classes, according to their size—viz., the largest, the medium, and the smallest. All those as large as, or larger than, the common carotids are included in the first class; those smaller than the common carotids and over one-fifteenth of an inch in diameter constitute the second class; while all less than one-fifteenth of an inch in diameter form the remaining third class.

Arteries over one one-hundredth of an inch in diameter have walls composed of an internal, middle, and external coat. The internal coat is of the same structure throughout the

whole arterial system, irrespective of the size of the vessel. It is thin, elastic, and identical in structure with the endocardium. The external coat, of white, inelastic fibrous tissue, varies but little in structure in the three sizes of arteries. The structure of the middle coat, however, is found to vary considerably with the size of the vessel. In the arteries of largest size the middle coat is formed almost exclusively of yellow elastic tissue, with but few muscular fibres. This middle coat gives to these largest vessels great elasticity; but, owing to the absence of muscular fibres, they possess little or no contractility. In the medium-sized arteries the yellow elastic tissue gradually disappears, its place being taken by muscular fibre. In the arteries of smallest size no yellow elastic tissue whatever is found, it having been entirely replaced by muscular fibre. In arteries less than one one-hundredth of an inch in diameter the inelastic external coat disappears, leaving but two coats in the vessel wall—the internal, and an external formed entirely of muscular tissue.

It will be seen, then, that the principal difference between the three sizes of arteries lies in the middle coat, and that, while the largest arteries have practically no muscular fibres, these fibres increase in number as the arteries diminish in size, until they alone form the whole of this coat. This muscular tissue is of the unstripped or involuntary variety, arranged in circular fibres surrounding the vessel, with a few fibres arranged in a longitudinal manner. The presence of these circular muscular fibres gives to the arteries of medium and smallest size great contractility—a power not possessed by the largest-sized arteries. By relaxation of these fibres the arteries are dilated to their widest extent, allowing a correspondingly increased amount of blood to pass through them. By contraction of the fibres the lumen of the arteries can be so narrowed that but a limited amount of blood can circulate through them.

The contraction and dilatation of these muscular fibres are regulated by nerve ganglia and fibres known as the vaso-motor ganglia and nerves. In the arteries of largest size, there being no muscular tissue, we find no nerve fibres distributed to their walls, although the nerves follow them in their course. The arteries of medium and smallest size, however, receive an

abundant nervous supply, the nerves passing to the circular muscular fibres.

The vaso-motor fibres and ganglia in the arterial walls receive their stimulation through non-medullated nerve fibres coming to them from the sympathetic nervous ganglia. Physiological experiments have proven that these fibres are not derived from the sympathetic ganglia, but are communicating fibres from the cerebro-spinal system. These fibres are of two kinds, each capable of conveying a distinct impulse. One conveys a motor impulse to the vaso-motor ganglia, resulting in a contraction of the arterial walls, while the other conveys an impulse which inhibits the action of the vaso-motor ganglia and allows the arterial walls to relax. The former are known as the vaso-constrictor, and the latter as the vaso-dilator, nerves.

Under normal conditions the vaso-motor nerves maintain the arteries in a condition of partial contraction or tone. They regulate the amount of blood to a part by causing a contraction or dilatation of the vessels, according as the part requires a diminished or an increased amount of blood. In this action the vaso-dilator nerves are the most active.

The centre presiding over these nerves is in the medulla, in the floor of the fourth ventricle. This centre, in turn, receives stimulating and inhibitory impulses from the cortex. The medullary centre is reinforced by centres situated in the spinal cord and in the sympathetic ganglia.

Contraction of the arterial walls can result from but one cause, that being a motor impulse sent to the vaso-motor ganglia over a vaso-constrictor nerve. Dilatation of an artery, however, can result from two causes, namely, a failure on the part of a vaso-constrictor nerve to convey its normal impulse, allowing the artery to become dilated by blood pressure, or from a vaso-dilator impulse inhibiting the action of the vaso-motor ganglia, while the vaso-constrictor impulse is present but rendered inoperative. Vaso-constrictor impulses are constant, while vaso-dilator impulses are intermittent.

In addition to these centrifugal constrictor and dilator fibres, which emerge from the spinal cord by the anterior or motor nerve roots, there are other fibres, entering the cord by the posterior roots, which convey centripetal influences to the

spinal vaso-motor centres. The sensory impulses so carried to the centres provoke reflex motor action resulting in either contraction or dilatation of the arteries at the periphery. Sensory impulses, resulting in reflex motor action, may also reach the vaso-motor reflex centres through the sensory nerves of the cerebro-spinal system.

In vaso-motor neuroses either one of two conditions may occur. There may be a spasm of the arteries, owing to an excessive vaso-constrictor impulse, and resulting in a greater or less diminution in the blood supply to the part supplied by the constricted arteries; or there may be a relaxation of the vessels, allowing an increased blood supply to the parts. This arterial dilatation may be active or passive. In active dilatation the vaso-constrictor nerve still conducts its normal stimulus to the vaso-motor ganglia, but its effect on the ganglia is overbalanced by the inhibitory action of the vaso-dilator nerve. In passive dilatation the vaso-constrictor nerve fails to convey its stimulus to the ganglia, either from disease of the centres or of the nerve itself, which allows the arteries to be dilated by blood pressure. This last condition is one of vaso-constrictor paralysis. In addition to these two conditions of spasm and of relaxation, there may be an alternation of excessive constrictor and dilator influences, resulting at one time in spasm and diminished blood flow, and at another in dilatation and excessive blood flow.

Prolonged spasm of the arteries gives rise to marked local symptoms and is soon followed by decided nutritive changes. The parts supplied by the contracted arteries are pale, cold, and numb. The skin is shrunken and wrinkled. Slight tingling sensations are felt. Anesthesia may be present to a greater or less extent. Gradually the nutrition of the part becomes defective, and atrophy with impairment of function follows. Nutrition may suffer to so great an extent as to produce ulceration or gangrene.

The effects produced by prolonged dilatation can be divided into primary and secondary. The primary effects are a red or mottled appearance of the skin, associated with increased temperature, both subjective and objective, increased secretion by the part, slight hyperesthesia, and rapid increase in nutritive changes. These primary conditions are later followed by

secondary changes, owing to the sluggish circulation through the widely dilated vessels. The hot, red surface becomes cold, blue, edematous, and clammy, although the subjective heat remains. Nutrition suffers and function becomes impaired. In the mixed or alternating form, heat and cold follow one another in rapid succession. The part is alternately flushed and pallid, and at times bathed in profuse perspiration.

Turning our attention to the pelvic organs, it is seen that the uterus, tubes, and ovaries are richly supplied with nerves, both from the sympathetic and cerebro-spinal systems, while important nerve trunks and plexuses ramify freely in the cellular tissue surrounding them. When we consider the injuries and diseases to which these important organs and the surrounding tissues are subject, we can scarcely fail to realize how seriously they must at times involve the nerves here distributed. As is well known, injury to, or irritation of, these pelvic nerve trunks and filaments is often followed by reflex disturbances in distant parts of the body. Irritation of pelvic nerves carrying impulses to the vaso-motor centres is followed by vaso-motor disturbances, not only in the pelvis, but also in distant parts as well. The following cases demonstrate how active the injuries and diseases of the female pelvic organs are in causing reflex vaso-motor neuroses.

CASE I.—Mrs. A., married, age 28, consulted me in 1888. Previous to the birth of her first and only child, in 1883, her health had been of the best. Labor was tedious and terminated by forceps. Two weeks after confinement she was attacked by pelvic peritonitis, confining her to bed for six weeks and to the house about three months. Gradually strength and health returned, and her usual light household duties were resumed, although she was never free from leucorrhea, backache, and slight intermittent pelvic pain. About one year after confinement her right arm began to show signs of increasing weakness. There was a subjective feeling of coldness in the arm and hand, and on exposure to cold this feeling was so intensified as to become exceedingly painful. Numbness and tingling sensations were often present. Gradually these symptoms grew more intense, until the arm became nearly useless. For two years she was treated for muscular rheumatism, but of course with no benefit. At the time

of her first visit to me the arm was pale and cold and the skin shrunken. Measurements over the middle of the biceps showed the arm to be one and one-fourth inches less in circumference than the left. Weakness was so marked that it was impossible to raise the arm to the head and retain it there long enough to do up the hair. Not even a light weight, as a glass of water, could be safely carried in the right hand. The arm was habitually carried flexed at the elbow and drawn across the body, as if in a sling. Severe attacks of numbness were frequent. Repeated careful trials failed to detect even the slightest pulsation in the radial artery at the wrist. After my failures to find radial pulsation the patient informed me that within the past year two other physicians had also failed to find pulsation. Pulse in left radial strong and natural. Patient is positive that she formerly had pulsation in right radial.

Examination of the pelvic organs disclosed a bilateral laceration of cervix extending high up to cervico-vaginal junction. A large amount of cicatricial material was present. The cervix was slightly eroded. A slight chronic general endometritis was present.

Recognizing the case to be one of vaso-motor neurosis of the spasmodic variety, and believing that it was of reflex origin from pelvic disease, I advised immediate treatment for the endometritis, to be followed, as soon as practicable, by repair of the lacerated cervix. This was readily consented to, and as soon as the endometritis was sufficiently relieved I successfully repaired the cervix. Within two months after the operation the arm began to show signs of improvement, and within six months a fairly strong pulse was discernible in the radial. The coldness, pallor, and numbness disappeared, strength fully returned, and to-day, two years after operation, the right arm has as great a circumference at all points as the left. No difference can be detected in the strength of the pulse in the two arms.

CASE II.—Mrs. B., age 40, consulted me in 1887 for the relief of growing weakness in both legs, associated with numbness, tingling sensations, coldness, and pallor of the surface. The sensation of coldness was extremely annoying, obliging her to sit with feet and legs near the fire nearly all of the

time, even in warm weather. The legs were so weak that she required assistance in ascending or descending a flight of stairs, and could not, on a level surface, walk a greater distance than two short blocks. These troubles had been present for about two years, and had gradually increased in severity. She has been confined four times, the last being a miscarriage, at the sixth month, in 1882. Examination showed a single deep laceration of the posterior lip of the cervix, with the formation of considerable cicatricial tissue. Firm pressure in angle of laceration caused slight pain and tingling in legs. A slight cervical endometritis and erosion was present. Diagnosis: Vaso-motor neurosis, spasmodic variety, of reflex uterine origin. The endometritis was relieved by treatment, and the laceration then closed by operation.

No marked change in the condition of the legs was apparent for nearly six months, when improvement commenced and progressed gradually to complete relief of constrictor symptoms in legs within eighteen months after operation. The legs are now strong, enabling her to perform her usual household duties, to ascend and descend stairs unaided, and to walk long distances without especial fatigue.

CASE III.—Mrs. C., age 30, confined but once, that in 1883, consulted me in 1888. She was suffering from chronic catarrhal salpingitis and chronic general endometritis. The symptoms of salpingitis and endometritis dated back about three years. For the past six months she had been greatly annoyed by rapid alternation of hot and cold sensations extending over the whole body, but especially marked on the abdomen, head, and shoulders. During the hot flushes the skin became intensely congested and was bathed in profuse perspiration. This condition was soon followed by coldness and pallor of the same parts. These conditions were identical with those often observed at the menopause. Menstruation, however, was regular, and is so still.

This was plainly a case of vaso-motor neurosis of the mixed or alternating variety. That it was of pelvic origin is clearly proven by the fact that as the salpingitis and endometritis improved under treatment the vaso-motor symptoms disappeared. She has now been entirely free from these vascular disturbances for about one year.

The striking similarity between the neurosal symptoms presented in the last case and those observed at the menopause naturally leads one to consider whether or not the climacteric hot flushes and their attendant conditions are not results of a vaso-motor neurosis. I am very decidedly of the belief, and in that belief I hold but that of many others, that the hot flushes, the sudden alternations of heat and cold, of blush and pallor, and the local and general sweatings, occurring at the menopause, are the results of a vaso-motor neurosis of the mixed or alternating variety, and generally of pelvic origin. That these disturbances are of the vascular system needs no demonstration. That they are of pelvic origin is shown by the report of Case III., where the relief of the pelvic trouble was followed by disappearance of vascular symptoms identical with those occurring at the menopause. Further, following artificial production of the menopause by removal of the tubes and ovaries, we frequently see the same vascular disturbances as occurred in Case III. and as occur at the menopause. In these cases of operation the forced cessation of function of the pelvic organs, and the changes which take place in the structures remaining after operation, are sufficient to produce the neurosis.

At the menopause the generative organs undergo considerable change of an atrophic nature and their function is abolished. The changes in the organs are surely sufficient to set up reflex nervous derangements resulting in vascular disturbance. Of course it is within the realm of possibilities for these vascular disturbances to be of a nervous origin, independent of the changes in the pelvic organs; but, in my opinion, such an origin is rare as compared with the frequency of a pelvic origin.

That the vaso-motor neuroses of the menopause may be aggravated or caused by pre-existing pelvic disease is undoubtedly true. It is equally as true that as severe neuroses occur at this time in women whose pelvic organs are not only healthy but have been all through life, showing that the climacteric changes are in themselves sufficient to produce these peculiar disturbances. I have made repeated local examinations in a number of such cases, and failed to find any abnormal conditions of the pelvic viscera. It is possible that in some

of these cases the vascular disturbances were occasioned by disease or derangements outside of the pelvis. Careful questioning and examination of the patients, however, failed to show such disease or derangement in other parts of the body. The fact that these vaso-motor disturbances subside after the climacteric changes are complete, argues very strongly in favor of a pelvic origin.

On the other hand, however, there may be cases of vaso-motor neuroses of the menopause which are not directly of pelvic origin, but owe their existence to the unbalanced condition of the nervous system. W. J. Conklin, M.D., in a paper on "Some Neuroses of the Menopause," read before the American Association of Obstetricians and Gynecologists in 1889, says: "The cases are not few in which the neurotic affections exist independently of all complicating disorders of the sexual or other organs of the body, the peculiar nervous instability of the menopause being alone responsible for the symptoms. Perhaps it may not be amiss, in an association where every disease is viewed through gynecological spectacles, to suggest that in some cases the pelvic symptoms themselves are *caused by*, not the *cause of*, the nervous disorders. The vicious circle begins in the nerve centres, not in the pelvic viscera. To ignore this fact and consider the latter alone is to wholly misinterpret the neurosis."

TWO CASES IN WHICH THE UTERUS WAS PERFORATED BY A CURETTE, BOTH RECOVERING.

BY

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HOFFMAN, of Philadelphia (in a paper read before the Philadelphia Obstetrical Society, April 3d, 1890), details a case of miscarriage in which the womb was perforated, by an experienced physician, during curettement for the removal of the placenta. Omentum protruded through the rent and was appa-

rent at the os. Four hours after the accident Hoffman opened the abdomen, removed some clots and bloody fluid, and sutured the opening. The patient recovered. For obvious reasons (the septic condition of the uterus and the protrusion of omentum) laparotomy was in this case eminently proper.

The following somewhat similar cases have come under my observation :

I. Multipara, last child two months old. Uterus seven inches long, very soft and boggy. Constant hemorrhage. Without an anesthetic the cervix was very slightly dilated, a double tube introduced, the uterus washed out, and the endometrium scraped with the utmost gentleness by the sharp curette. An assistant, who had his hand over the uterus, mentioned at this time that he felt the instrument immediately under the abdominal walls. The uterus was washed out with a weak sublimate solution. The patient complained of severe pain, became somewhat collapsed, and was put to bed with a pulse of 140. The subsequent history was that of pelvic peritonitis combined with distinct mercurial poisoning. Recovery was tedious.

Without doubt a small opening was made in the softened uterine walls, through which some of the sublimate solution found its way; and to the introduction of this poison into the abdominal cavity, more than to the mechanical injury, are the subsequent symptoms to be attributed.

In a similar case I would scrape with the finger nail and irrigate with plain water. Such was the condition of the patient that I am inclined to believe that a laparotomy would have resulted fatally.

II. Multipara, fungous endometritis, prolapse, rectocele, hemorrhoids. In the absence of a curved dilator, the cervix, the walls of which were exceedingly thin and hard, was slightly stretched with great difficulty by a slender pedicle forceps, and the curette introduced with some force. It entered eight inches. The fact that the uterus was perforated was further substantiated by the introduction of a sound into the abdominal cavity. The vagina, which had been prepared by sublimate douches, was washed with hot water and the patient put to bed in excellent condition.

Having prepared for a laparotomy, I remained in the pa-

tient's room for several hours. Slight pain with an elevation of temperature to 100° ensued. The pulse remained normal. After five hours a digital examination showed slight though distinct hardening of the vaginal vault, which in forty-eight hours had disappeared. No further trouble ensued, but as a precautionary measure the patient was kept in bed a week.

After a month the cervix was dilated (taking the precaution to ascertain the direction of the canal by the sound, and to use a properly curved dilator) and the endometrium scraped. Trachelorrhaphy, colpo-perineorrhaphy, and dilatation of the sphincter ani were made at the same time. The recovery was speedy, and the patient is now well.

Here there was certainly no indication for laparotomy.

HYPERTROPHIC ELONGATION OF THE UTERUS UPWARD
INTO THE ABDOMINAL CAVITY, OCCASIONED BY
AN INTRALIGAMENTOUS OVARIAN CYSTOMA,
IN A WOMAN AGED 75; CYSTECTOMY;
ENUCLEATION; RECOVERY.

BY

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THE following case is full of interest, both because of the peculiar pathological condition—an elongated uterus—as well as on account of the happy result of an extensive operation, the enucleation of a large intraligamentous ovarian cystoma being followed by a rapid recovery, although the patient was already well past her threescore years and ten.

HISTORY.

Mrs. N., a slight, dry-skinned old woman, age 75, was admitted to Dr. Kelly's service in the Johns Hopkins Hospital June 10th, 1890. She had been married fifty-five years; had had one child and no miscarriages. She passed the menopause at 50 years of age. Aside from the common diseases of childhood, her health was always excellent.

Two years ago she discovered a small, painless mass in the left hypogastric region. This grew from that time on, gradually distending the abdomen to its present size. Her various bodily functions were in no way affected.

EXAMINATION.

The abdomen is greatly distended and has a markedly vaulted appearance, rising in a prominent curve from the ensiform cartilage down to the pubes. On the left side just below the umbilicus the skin is elevated by a boss the size of the palm of the hand. Some irregularity of the surface is also felt on the right side.

Measurements.—From ensiform cartilage to symphysis pubis, 47 cm. ($18\frac{1}{2}$ inches); girth over most prominent portion of the tumor, just above umbilicus, 103.5 cm. ($40\frac{3}{4}$ inches).

Percussion.—Dulness over whole abdomen, excepting deep in the right flank and up under the ribs, extending over on to the left side. Percussion note in the left flank flat. In the right lateral position the percussion note in the left flank continues dull; on the right side, as she lies in the left lateral position, the resonance becomes accentuated.

Vaginal examination.—On the right side of the cervix a resisting mass can be felt, filling out the pelvis. Nothing detected on the left side. The body of the uterus cannot be outlined.

The *urinary examination* revealed the presence of a distinct amount of albumin, giving a well-defined ring and a few hyaline and granular casts. The condition of the urine after operation and just before the patient left the hospital was much improved, containing but a slight trace of albumin and a very few hyaline casts. The arteries all over the body were atheromatous.

OPERATION.

Abdominal section and ovariectomy by Dr. H. A. Kelly, June 18th, 1890, at 10 A.M. The operation lasted, from commencement to completion, thirty minutes. The patient was under the influence of chloroform for forty minutes. The pulse before the operation was 66, and immediately after operation also 66.

An incision 20 cm. in length was made through the linea

alba. The second cut exposed the sac of the tumor, which was nicked with a bistoury, and the little hole stopped with the index finger until a large ovariotomy trocar was grasped and thrust into the sac, which discharged two gallons of thin, dark-brown fluid. When the sac was thus emptied the fingers were introduced into its interior and a number of smaller cysts opened by breaking down their partitions, discharging fluids varying in color from brown to yellow. The emptied cyst was then pulled carefully and slowly through the incision, and, just as the delivery was completed, a large cyst which had lain in the pelvis popped out unruptured. The tumor

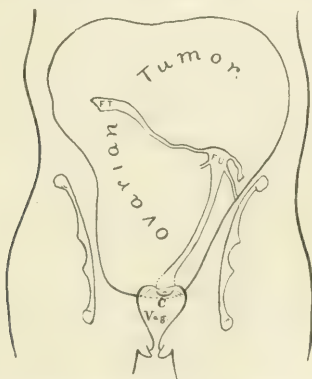


Figure showing the large ovarian tumor developed upward into the abdomen and downward to the pelvic floor in the right broad ligament. The long-drawn-out lower segment of the uterus is seen between the fundus uteri (FU) and the vaginal portion of the cervix (C). The right Fallopian tube (FT) is seen greatly lengthened.

and its contents weighed plus 18 pounds. The evacuation of the fluid and the removal of the sac left the abdominal walls very flaccid and allowed an easy inspection of the abdominal cavity, of the stomach, the great intestine, the omentum and small intestines, and the pelvic viscera. On examining the pedicle before removing the tumor, it was found to contain the whole body of the uterus, as well as its long, thin, drawn-out lower segment which had been delivered with the ovarian cyst. The body was small, connected with the vaginal cervix by a long, narrow cord extending over the left

lateral surface of the cyst, which was developed in the right broad ligament and thus sessile along the whole of the right border of the long-drawn-out uterus.

The vaginal portion of the cervix lay *in situ naturali* near the pelvic floor. The small body of the uterus measured about $2\frac{1}{2}$ cm. in width and 3 cm. in length, and the drawn-out portion connecting this with the cervix below was 1 cm. in diameter.

The uterus thus lengthened measured from the pelvic floor where the vaginal cervix lay, to the fundus, 21 cm. ($8\frac{1}{4}$ inches). This extension was wholly upward into the abdominal cavity. From the right upper cornu uteri the Fallopian tube was elongated and stretched out 24 cm. over the surface of the tumor. From the posterior surface of the uterine body a thick, flat cord 1 cm. in diameter, representing the ovarian ligament, spread out on the surface of the cyst. The growth was therefore an ovarian cystoma, completely filling out the right broad ligament and acting upon the ductile supravaginal cervix so as to displace the body of the uterus high up into the abdominal cavity. The enucleation of the mass was then proceeded with, and as the tumor extended down to the pelvic floor, widely separating both layers of the broad ligament, it was removed together with the whole of the right broad ligament, commencing at the right cornu uteri and keeping close to the uterine wall. The right uterine artery was ligated in its course near the floor of the pelvis, and in this way hemorrhage was checked from numerous small uterine branches, laid bare by the enucleation, above the point of ligation.

On reaching the pelvic floor in the process of enucleation, it was found possible to transfix and tie at a little higher level in the broad ligament by the following device: Catching the inner lining membrane of the tumor and pulling it upward, the loose cellular tissue of the pelvic floor allowed about 2 cm. of displacement of the tumor from the floor. The tumor was thus readily tied off at this point and the enucleation continued out towards the right pelvic wall. The ligatures (silk) were next passed between the tumor and the pelvic wall, including last of all the fold of tissue containing the right ovarian artery and veins, thus completing the separation of the

tumor. The whole of the right broad ligament was in this way removed by a series of sixteen silk sutures. The abdomen was then well irrigated with hot distilled water (110° F.), a glass drainage tube inserted, reaching to the floor of the pelvis, and the incision closed.

Ten minims of the tincture of digitalis and 20 minims of brandy were given hypodermically during evacuation of the cyst.

The patient was nourished during the twenty-four hours following operation by two nutritive enemata containing peptonized milk 2 ounces, brandy 1 ounce, and the white of 1 egg; the first given at 11 P.M., and the second at 1.30 A.M. on the morning of the following day. She also had 2 ounces of brandy by mouth, diluted with water, in teaspoonful doses at intervals of two hours, beginning at 8 P.M. on the day of operation. On the second day she had two more nutritive enemata, and brandy (1 drachm) every two hours, and milk (a half-ounce) seven times at intervals of two hours. On the third day she took beef tea and milk, a half-ounce of each at a time, every alternate hour, and brandy (1 drachm) every two hours. On the fourth day milk (3 ounces) every three hours, and brandy (2 drachms) every three hours. On the fifth day she was given soft diet. Her bowels were moved by enema on the second day after operation. She passed 64 ounces of urine by catheter on the first day, 34 ounces on the second day, and after that time it was passed naturally. At the time of her discharge the condition of the urine had undergone a remarkable improvement, as stated. There remained but a slight trace of albumin and a few hyaline casts. The temperature reached 100° on the day after operation; the rest of the time it ranged between 98° and 99° . The pulse ranged from 76 to 106. The daily notes made were as follows:

June 18th: Operation. June 19th, 12 M.: General condition excellent. Reacted from anesthetic without nausea or vomiting; passed a night without pain, sleeping at intervals. Abdomen flat. Two drachms of watery, bloody discharge removed from drainage tube. June 20th: No pain this morning, "only feels weak and thirsty"; looks bright and well. Drainage tube removed. Provisional suture, left loose for that purpose in the track of the tube, brought up and tied, and the

abdominal wound thus completely closed. June 24th: All of the sutures removed; the line of union is perfect throughout. Abdomen remains scaphoid. Doing well in every way. She sat up out of bed on the twentieth day after operation, and was discharged from the hospital July 24th, 1890, feeling very well, and much improved.

A SIMPLE AND EASILY APPLIED BREAST SUPPORT AND PRESSURE BANDAGE.

BY

ARTHUR P. CHADBOURNE, M.D.,

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(With four woodcuts.)

This breast support was originally made to use when much pressure was needed either to dry up the breast or in the more extreme cases of distention. The special points aimed at were that there should be some easy and quick way of increasing or diminishing the pressure without reapplying the support, and also that where little pressure was needed the support could be quickly and safely put on by any one who used ordinary care.

The support may be made from linen, or cotton flannel, the first being the coolest and most comfortable. It is double thickness, and the cloth must be stitched by hand along the edges enclosed by the brackets in Fig. 1, as this gives greater elasticity; elsewhere machine stitching is equally good. With the exception of the "back pieces" (A B C D, E F G H, Fig. 1) the cloth should be cut bias, as indicated in the drawing. The gores (K L, Fig. 1), along the edges of which eyelets are inserted, or holes punched and "buttonhole-stitched," can be laced to fit either a large full breast or a small flat one, and the space covered by the lacing is so small that it causes no discomfort and leaves no mark on the breast.

For the other lacings, hooks fastened about one inch apart to

a piece of tape can be bought at any dry-goods store and sewed firmly to the support. Another way, which makes a better-looking support and one that can be more easily washed, is to fasten a row of loops, made from a corset lacing, by three lines of machine stitching through a piece of tape laid over the bases of the loops (Fig. 3).¹

To apply the support, raise the breasts to the desired posi-

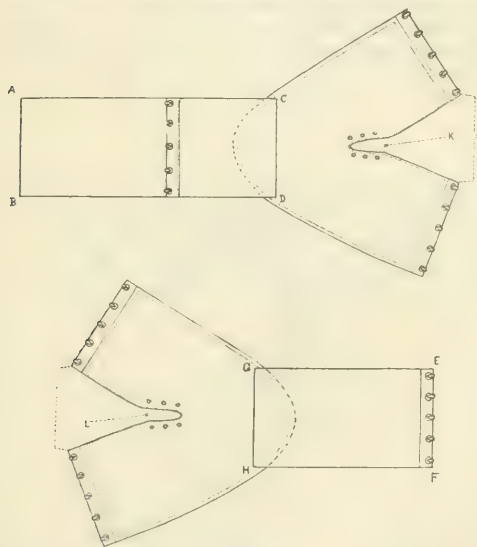


FIG. 1.
(Scale, $\frac{1}{8}$ inch = 1 inch.)

tion, and measure the distance from the place on the breast where the angle K (Fig. 1) is to come (a spot that should be just at the edge of the areola) around the back to the corresponding point on the opposite breast. Lay the two halves of the support on a flat surface, and lace the back pieces together, making the desired length. Pass the support under the patient, and have her hold up the breasts with the palms of her

¹ This support is now made by Messrs. Codman & Shurtleff, Tremont Street, Boston, Mass.

hands. Then begin at the outer edges and lace the front pieces loosely, and, after this has been done, gradually tighten the lacing until the desired support is obtained.

Cotton wadding or some similar smooth and soft material should be placed between the breasts, and it is well to cover this with a piece of old linen to keep it from catching in the lacing. Small pieces of linen under the gores (K and L, Fig. 1) make the support look much more neat.

In lacing, the *greatest pressure should be outside of all breast tissue, and gradually and steadily grow less as it ap-*

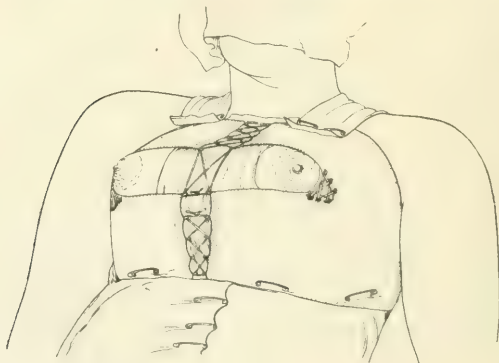


FIG. 2.

proaches the nipples, until at the inner edge of the support there is practically no pressure, and so no opportunity for the milk to collect and be held back in the periphery.

If the support is too loose after nursing, it can be tightened in a moment; and if it is too tight a slight slackening of the two anterior lacings will relieve the tension. Last of all, a piece of linen about two inches wide and of variable length must be folded in the middle, pinned to the upper edge of the support in the median line behind, brought over the shoulders and pinned to the upper border of the support in front, as nearly as possible in the median line, and drawn tight enough to make it smooth; the lower edge is also drawn down until

it is smooth, and pinned to the binder in front and in the median line behind.

When a pressure bandage rather than a simple support is needed, it is put on in the same way, except that the pressure

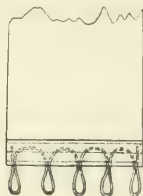


FIG. 3.

is less unpleasant and the breasts more quickly emptied if a layer of cotton wadding or some similar material is put all around the breasts under the support. A very great amount of pressure can be safely used if care is taken to *begin outside of all breast tissue*, and to graduate the amount of cotton be-

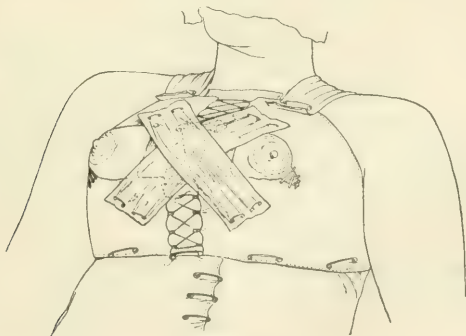


FIG. 4.

tween and around the breasts and the tightness of the lacing, so that the pressure shall *steadily* diminish from the periphery toward the nipples.

Occasionally there is a lump in the inner side of the breast,

and in these cases better results can usually be obtained by having two narrow strips of linen pinned tightly to the support and crossed between the breasts (Fig. 4), to increase and equalize the pressure over that place.

A support of the dimensions shown in the figure will fit certainly seventy-five per cent of all cases, though in rare instances an extra width of three-quarters to one inch will be more easily adjusted to the patient.

A binder made in a manner similar to the support, lacing in front, and with four laced gores on the sides, two above and two below, is said by several patients on whom it was tried to be much more comfortable than the ordinary binder, and it seems to preserve the figure better. Such a binder must of course be made from measurements taken from the individual patient.

FIVE CASES OF ECTOPIC GESTATION, WITH REMARKS.¹

BY

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OUR knowledge in the interesting field of ectopic gestation has increased with the rapid strides that gynecology has taken within the last few years. Conditions which formerly were not recognized during life are now, through improved methods of examination, accessible to our diagnostic ability, and daily we find new contributions to the literature on the subject. Very much has been written concerning etiology, calling forth considerable controversy, but the fact remains that very much is still in the dark which needs enlightening. It cannot be my task to bring light into this darkness; I leave that to others who are more able to contribute to the subject by reason of having larger material at their disposal. I simply wish to give my experience briefly, and hope to promote the general interest. Only by reporting these cases, whether the result has been a favorable or an unfavorable one, can

¹ Read before the German Medical Society of New York City.

the attention of the general practitioner be drawn to this unfortunately not very infrequent occurrence. Upon the early recognition of this condition everything depends, for if prompt action is anywhere called for it is in these cases. The surgeon cannot tread upon a more gratifying field than this; his timely interference may prove life-saving in every respective instance. These cases should be referred to the surgeon. Granted that this category of operations belongs to the easiest of abdominal surgery, as is said, it certainly would not be to the interest of the patient if the general practitioner as a novice should undertake the same. On the contrary, in my opinion the most experienced operator cannot have too much experience. Even if we admit that most cases offer few complications, still we must not forget that a majority of patients are considerably exhausted at the time of the operation, that even marked collapse may exist, and that there are some cases, complicated by old peritonitic adhesions, that offer great difficulties, so much so as to render them inoperable. But what I desire is, that the general practitioner should endeavor to become so proficient in diagnosis as to recognize with the aid of the history—which, unfortunately, cannot always be clearly elicited—a tumor developing in Douglas' pouch or the parametrium, but above all to observe the early manifestations of a threatening rupture, or even the occurrence of an intraperitoneal hemorrhage.

Some of the most able gynecologists look upon the diagnosis of ectopic gestation as an easy matter. I cannot coincide with their view; on the contrary, I maintain that before rupture has taken place the diagnosis is one of the most difficult problems which can come under our consideration, and that in most cases we cannot make a positive diagnosis. After rupture has occurred the matter naturally assumes a different aspect. Here, then, we ought to come to a final result by conscientious differentiation.

My experience comprises five cases, which came under my observation within two years. Of these, four were operated upon, two of which recovered and two resulted fatally. In the two cases with favorable results the operation was performed after rupture had taken place. In one of these about one hundred and fifty grammes of blood had effused into the

abdominal cavity, while in the other the extremest anemia existed at the time of the operation; the hemorrhage was so profuse as to distend the abdomen enormously, the abdominal cavity containing between three and four litres of blood—circumstances leaving but little hope for recovery. Of the cases with fatal result, one was operated upon while completely exhausted. The operation had been proposed and refused until then, although the diagnosis was clear to my mind. In the other fatal case I operated for abdominal tumor, the nature of which was doubtful, not expecting to find ectopic gestation, the history certainly excluding such a possibility. One case, chronologically the first, succumbed to an intraperitoneal hemorrhage. Operative interference was declined. The following is the history:

CASE I.—Mrs. M., æt. 29, menstruated regularly since her thirteenth year; gave birth to her first child a year ago. Menstruation set in again two months after confinement, recurring regularly until one month ago, when the menses lasted only three days instead of six as usually. The flow was very scant. No signs whatever appeared that could lead her to think that she was pregnant, especially as precautions were taken to preclude such an event. With the approaching menstruation an increased sexual irritability appeared and was gratified to an excessive extent. During this procedure the patient experienced a sharp pain in the right side of the abdomen. This pain was attributed to indiscretion in eating, and all sorts of household remedies were used, and not until the condition of the patient became exceedingly alarming was medical aid summoned. Upon my arrival, three hours after the first appearance of the pain, I found the patient in complete collapse, pulse hardly to be felt, body bathed in cold perspiration, extremely anemic, the right inguinal region very sensitive upon touch, sensorium clear. I expressed my opinion that the case was one of intraperitoneal hemorrhage, very likely caused by rupture of an impregnated tube. This assertion was doubted, as the patient said that she had had several of these attacks of colicky pains before. The possibility of pregnancy was denied by the husband, who declared that he had not cohabited with the patient for months back. The examination of the vagina revealed signs of beginning

menstruation. Douglas' space and the upper vaginal vault were filled with a mass of doughy consistence. It was impossible for me to determine the size of the uterus on account of the extreme sensibility of the parts. For some hours I applied every conceivable remedy to overcome the collapse. Two physicians were called in consultation, who, although inclined toward my expressed opinion, still were somewhat in doubt, as the history did not warrant such a conclusion. The patient sank rapidly, became unconscious, and died twelve hours after rupture had taken place.

The necropsy revealed: The abdominal cavity contained about two litres of fluid blood, large coagula around the uterus, uterus enlarged and containing the decidua. The right tube was distended by the products of gestation. Rupture had taken place at the upper part of the tube, the rent being just large enough to allow the head of the fetus to escape; an artery of considerable calibre was the source of the hemorrhage. The right ovary contained the corresponding corpus luteum. Inquiry later on elicited the true history of the case.

CASE II.—Mrs. R., æt. 32, had four children; the confinements were difficult; the last one was complicated with puerperal peritonitis; last child was born four years ago. Menstruation, although regular during the last four years, became more profuse every month. Patient lost about thirty-five pounds in weight during the last eight months; at the same time she noticed that her abdomen increased in size. Last menstruation, which occurred five weeks ago, was accompanied by great pain, was very profuse, and continued up to the time of examination. In the fifth week I was asked by Dr. Schalek to see her. I found an extremely anemic and irritable woman. Examination revealed an abdominal tumor, somewhat movable, of the size of a man's head. The upper boundary of the mass could easily be made out through the abdominal walls, while per vaginam the tumor seemed to be in close connection with the uterus. The uterus itself was retroflexed; its cavity measured three inches. The abdomen was not sensitive. There was a moderate flow of blood from the vagina at the time. I concluded that we had to deal with a fibroma or myoma of the uterus, and recommended castration. The diagnosis was verified under an anesthetic. The

condition of the patient had become markedly worse, so that at the time of the operation she presented all the symptoms of extreme anemia. The flow had not ceased.

On opening the abdomen I found the omentum closely adherent to the peritoneum, except for a space of about the size of a silver dollar, and, after unsuccessful attempts to overcome the adhesions, I cut through the omentum at the free space and thus exposed the surface of the tumor; but even now it was impossible for me to make further progress in the operation upon either side. The tumor, which was elastic to the touch, filled the whole of the lower part of the abdomen. An explorative puncture showed no fluid. I now thought the case to be one of soft myoma with extensive peritonitic adhesions. Closure of the abdomen followed; death after twelve hours.

Upon examination of the specimen it became apparent that we had to deal with a tubal pregnancy of the right side, the rupture of the sac having occurred in the second month of gestation. Evidently the effusion of blood into the abdominal cavity was a slow one, and was retarded greatly by the numerous bands of peritonitic adhesions which existed in the whole pelvis. This explains the multilocular arrangement of the blood coagula which we found in the specimen. Above, the extravasated blood was hemmed in by a sort of second diaphragm, which was formed by the adhesion of the mesentery and its small intestine to the anterior wall of the abdomen. What I mistook for the upper surface of the myoma was really mesentery distended by coagulated blood. The retroflexed uterus did not contain a decidua, but the smooth inner surface indicated plainly that such a membrane had been expelled a short time previously.

CASE III.—Mrs. K., æt. 39, multipara; last confinement two years ago. She had suffered from total prolapse of the uterus for some time, for which complaint I treated her according to Brandt's method, with temporary success. The prolapse returned after six months. Renewed application of massage was badly borne. A para- and perimetritis were developed, so that the patient was compelled to keep to her bed for some time. She seemed to recover completely, but menstruation became more painful and profuse for the past few

months. The last menstruation was particularly profuse, and was accompanied by severe labor-like pains. After the hemorrhage had lasted fourteen days without intermission, she sent for me. Examination revealed: Marked anemia; uterus somewhat enlarged, pushed toward the left side by an uneven mass about the size of a small fist; the tumor was slightly movable, not painful. I could not detect any pulsation. The breasts contained colostrum. Any possible doubt concerning diagnosis was removed by the expulsion of a well-formed decidua on the third day. I urged operation. The relatives, however, would not consent. Three days after this occurrence I was sent for in haste, rupture having taken place. The family was urging me now, if possible, to help the patient by operation. Time, 2 o'clock at night; the poorest sanitary surroundings—tenement house; patient in collapse. The operation offered but little difficulty. The abdominal cavity contained about one litre of fluid and coagulated blood. After extirpation of the pregnant tube, followed cleansing of the abdominal cavity by the use of quantities of warm water previously boiled. In the lower edge of the wound I introduced a strip of iodoform gauze for purposes of drainage. In spite of the short time consumed by operation and toilet—thirty to forty minutes—the patient sank rapidly, and died after forty-eight hours. I endeavored to overcome the extreme anemia by intravenous infusion of salt solution and by numerous subcutaneous injections, and I believe I noticed a temporary improvement.

The autopsy revealed: Abdominal wound well agglutinated, peritoneum normal, neither blood nor bloody serum in the abdominal cavity.

The specimen shows the right tube distended in the centre by the products of conception of about the fourth to sixth week. We see placenta surrounded by coagulated blood, which latter must have formed at different times, as we can judge from its varying consistence. Rupture took place at the upper and outer portion of the tube. The fetus escaped into the abdominal cavity and could not be found. The uterine extremity of the tube was occluded.

CASE IV.—Mrs. S., æt. 31. Menstruation began at 14, was regular. Had four children, the youngest 4 years old. Since

last confinement the menstruation has been irregular, occurring from three to five weeks, lasting from one to two weeks. Beginning of February menses came on and lasted to the end of the month. Beginning of March she had a watery discharge tinged with blood. Beginning of May profuse hemorrhage occurred, accompanied by severe pains which lasted without intermission until the day of operation, June 27th. About the middle of May the pains became very severe, labor-like in character, and accompanied by attacks of fainting. Then she was free of pain for a few days, but pain set in again, although less severe, the abdomen all this time very sensitive. Upon examination a mass of doughy consistence was discovered in the right parametrium, close to the uterus and extending backward into Douglas' pouch. Uterus somewhat enlarged, three inches, drawn toward the left side, slightly sensitive. The abdomen was moderately distended, but contained apparently no free fluid. Patient was very anemic.

The operation offered no special difficulties. The right tube, bound down by adhesions, contained in its centre a mass of the size of a small orange, consisting of blood coagulum enclosing the remnants of a conception of the fifth to seventh week. Rupture evidently had occurred in its upper border, the fetus having escaped into the abdominal cavity. In Douglas' pouch I found a large mass of organized blood, while the abdomen contained only a few ounces of fluid blood.

The specimen in its fresh state showed fetal structure plainly, while now, after preserving in alcohol for some time, the appearance to the naked eye has somewhat changed, the hardened blood coagulum obstructing the view. Microscopical examination leaves no doubt as to the true nature of the specimen; besides, we find in the right ovary the corresponding corpus luteum verum in a good state of preservation.

I am under obligations to Dr. Schlegel for this case.

CASE V.—Mrs. W., *et.* 29. Menstruation began at 19 regularly. Had one child seven years ago, one abortion of the second month two years ago; after this menstruation was regular until three months ago, when she ceased to menstruate. At the time for her next menstruation, pains came on, labor-like in character, fainting spells, cold sweats, moderate bloody discharge from the vagina. The pains, however, ceased, so that

she could attend to her household duties. Toward the beginning of the third month, after unusually heavy housework, she was attacked with severe pain in the abdomen, one fainting spell following another. After the application of ice and the administration of opium she recovered somewhat, but only transitorily. The pains and weakness increased to such an extent that Dr. Bachmann, who had the kindness to refer the case to me, could no longer doubt that a progressive intraperitoneal hemorrhage was going on. I could only consent to this view, especially as, by the time I arrived, the condition of the patient had grown much worse, making the state of affairs much more apparent.

Examination.—Patient anemic to the utmost, sensorium clear. Abdomen very much distended and sensitive. Percussion reveals dulness all over the abdomen, with the exception of a space, of about the size of a hand, over the umbilical region. Distinct sense of fluctuation from fluid contained in the abdomen. Uterus enlarged to about three inches, located centrally, movable, surrounded by fluid in Douglas' pouch; toward the right side an indefinite tumor of uncertain dimensions, as bimanual examination is impossible. Per rectum no further information. In spite of the precarious condition of the patient, operation was determined upon and performed by me as speedily as I could make the necessary arrangements.

In the meantime the patient grew worse, pulse very weak and rapid, 150 to 160, respiration 35 to 40, abdomen still more distended; dulness was present over the whole surface.

Upon incision of the abdominal walls the peritoneum, of a bluish color, bulged forth, on incision of which an enormous quantity of blood welled up—on unanimous estimation, 3 to 4 litres. The sac, of the size of a large fist, was easily found and freed of a few recent adhesions. On bringing it into view it ruptured, however, and the contained liquor amnii escaped into the abdominal cavity. The protruding fetus was hanging on its unsevered funis. Ligation and removal of tumor followed. As there was considerable hemorrhage noticeable in the deep pelvis, especially in Douglas' pouch, some time was spent in irrigating the abdomen with warm sterilized water. Quite an amount of blood coagulum was washed out; but as it seemed impossible to thoroughly cleanse the peritoneum, and

as I am not at all convinced of the necessity of doing so, I closed the abdomen after introducing a strip of iodoform gauze over the bleeding surface.

Almost against expectation the patient rallied; vigorous stimulation per os and rectum was resorted to, and she made an undisturbed recovery.

Examination of the specimen shows: Fruit sac containing fetus and placenta of the tenth to twelfth week. On the outer surface of the sac we see the tube running in such a manner that it fairly encircles it. In spite of the greatest pains, I have been unable to find the communication between the sac and the tube, and I am compelled to assume that we had to deal with a tubal pregnancy, which was, after early rupture, converted into an abdominal gestation.

Even if the number of these cases is not a very large one, still a few points of interest present themselves upon which I would like to dwell.

In the four cases operated upon I have done so after rupture had taken place; only once was I able to make the diagnosis before rupture occurred. This experience coincides with that of other operators. Lawson Tait, who certainly has seen the greatest number of these cases, says that he generally operated after rupture had taken place. This shows plainly how far we are from the ideal point, for all our endeavors surely must be directed toward early recognition of this so eminently dangerous condition, without exposing our patients to the manifold dangers involved in an intraperitoneal hemorrhage.

What, then, are the difficulties that confront us? Above all is the diagnosis. Within the first weeks we are unable to diagnose ectopic gestation positively. To the observing physician two alternatives present themselves: either to confirm his diagnosis by an explorative incision, or to resort to expectant treatment—to wait and thus expose his patient to the dangers of rupture. For the former, besides the willingness of the operator, the consent of the patient must be obtained. She rarely can be convinced of the necessity of such a severe procedure, especially as often such grave symptoms which would tend to let the condition appear to her to be a precarious one, would be absent in the beginning. If we con-

clude to follow the expectant treatment we assume a great responsibility, which can only be excused by our constant readiness for operative interference. As pregnancy advances symptoms occur which ought to be able to confirm our suspicions. Above all, I mean the labor-like pains which occur shortly before rupture takes place, and which are to be observed in almost every case. It is now that a patient's attention is drawn forcibly to the unusual course the suspected pregnancy is taking; she becomes alarmed, and shows greater readiness to listen to any warning coming from the physician. The critical time for action has come, for upon the course we pursue the future of our patient depends, and I believe by prompt operation at this stage we are able to insure our patient the most favorable prognosis.

In the five cases which I had opportunity to observe, the history plainly shows such a period three times. In Case III. I allowed this period to pass without interference, and my patient died subsequently from extreme anemia and the results of the operation.

A second constant symptom is the atypical uterine hemorrhage, which in the beginning may be looked upon as a profuse menstruation, or even threatening abortion, but soon it may be distinguished by its intermittent character and moderate quantity. Often we have the opportunity to observe the decidua, or pieces thereof, in the discharge. In the majority of my cases the hemorrhage was quite profuse at the beginning; in course of time it became less and the discharge gradually assumed a chocolate tint.

A further symptom is the enlarged uterus at the time of examination. This was well marked in every one of my cases, and I believe to have convinced myself of the correctness of Fraenkel's assertion that the organ gains mainly in its long axis. The ease with which the sound would enter the uterine cavity, and the impression of an empty space communicated thereby, I found very striking.

A symptom to which, however, less weight is to be attached is the early activity of the breasts, certainly to a greater degree than we find to be the case in normal pregnancy of the same duration.

But what course are we to pursue in case rupture has taken place?

A decided change in opinion has occurred on this point within the last few years. While five or six years ago, in cases of intraperitoneal hemorrhage from ruptured ectopic gestation or any other cause, such advice as compression of the aorta, etc., was given, and only in the extremest cases was laparotomy for the purpose of stopping hemorrhage resorted to (Veit, "Eierleiterschwangerschaft," 84), the opinion now tends to open the abdomen as speedily as possible, to find the source of hemorrhage and to control it by ligature, not leaving it to chance whether this special case be one of the few fortunate ones in which hemorrhage is stopped by thrombus formation, depending on diminished arterial pressure.

Veit and Parry show statistically that fifty and sixty per cent respectively of all cases left to nature are lost, while Zmigrodzki found even a mortality of seventy-three per cent in seventy-nine cases in which no interference occurred. How favorably do the figures of cases in which operative measures were taken compare with these, especially when we look upon the large number of consecutive cases, as in Tait's lists, where we see recovery follow the operation invariably.

But even in the most desperate cases, where laparotomy was performed as the last resource on a moribund patient, such an undertaking was often rewarded by good results. It must be our duty in all, and even in apparently hopeless cases, to give the patient the benefit of an operation, and thus offer her the only chance of recovery.

My fifth case must be considered as belonging to this class. Recovery took place in spite of beginning peritonitis and extremest exhaustion.

In conclusion I wish to touch upon one more point, to which I had occasion to draw attention before (*Med. Wochenschrift*, January, 1890). It concerns cases in which marked anemia and total exhaustion were present. I believe it to be of advantage under these conditions to shorten the time of the operation by abstaining from the now customary irrigation of the abdominal cavity for the purpose of cleansing the same from blood and coagula. I believe that we benefit our patients thereby in several ways—first, by curtailing

anesthesia; secondly, by omitting the mechanical irritation that the peritoneum is subjected to by the hands and water; and, thirdly, that we leave a fluid in the abdomen which, if not infected, ought certainly to be physiologically the most suitable one to replace the lost blood to the system by its resorption by the peritoneum. My proposition, therefore, is, after tying and removing the fruit sac, to close the peritoneal cavity.

In Case V. I had opportunity to partly follow this suggestion. Irrigation was used chiefly as a hemostatic, as I had to deal with a profuse parenchymatous hemorrhage from newly organized blood clots; but I did not continue it long enough to remove the blood and clots completely. In omitting the irrigation we would miss the favorable effects which we see usually follow the application of warm water to the peritoneal cavity in cases of collapse; still this could be obtained by rectal infusions of warm water—in fact it may be preferable, especially when the observation of Polaillon should be sustained by others. He has seen syncope follow the use of warm water in the abdominal cavity three times, once with fatal result.

As a direct proof of the practicability of my device, I may mention two cases of ectopic gestation published lately by Bernays. In both he desisted from washing out the peritoneal cavity, being probably led by the same motives which induced me to make the proposition. His results were very satisfactory.

A CASE OF ACCIDENTAL HEMORRHAGE FROM THE GRAVID UTERUS.¹

BY

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 Surgeon in Charge of the Department of Diseases of Women in
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THE various gynecological subjects have been so frequently and thoroughly discussed during the past few years that little remains worthy of more than a passing comment.

¹ Read before the Washington Obstetrical and Gynecological Society, February 7th, 1890.

Who would now venture to occupy the hour with the discussion of the lacerated perineum (which, by now, will not hold another stitch), or the cervix uteri, or the shrinking, hiding, unoffending normal ovary, or the much-offending tubes? All the paths and approaches to this scientific temple have been beaten down and hardened by the constant tramp of many feet of passing gynecological pilgrims and devotees, so that the novice is left no opportunity to leave his "footprints in the sands of time."

It is nigh impossible to present anything new or to speak better upon any of the old subjects. Nevertheless, at the risk of "threshing over old straw," I will venture to present, for the consideration of the Society, a case arising in my practice which has to commend its introduction its extreme rarity of occurrence, its even greater rarity in the result.

As I have attended this patient in all her confinements, I will, if the Society will indulge me, refer to some facts connected with previous labors before proceeding to the presentation of the particular one made the subject of this paper.

The normal attachment of the placenta at the upper zone of the uterus and far away from the point which is occupied in placenta previa, of either variety, does not absolutely insure the patient against its partial separation with accompanying hemorrhage, which may be slight or severe, retained in utero or flow out between decidua vera and reflexa, and be of such character as to cause death of both child and mother. This variety is termed "accidental hemorrhage," and must not be confounded with that caused by the separation of a placenta situated at the lower zone of the uterus and known as unavoidable hemorrhage. Goodell mentions four conditions under which concealed hemorrhage takes place: (*a*) when the placenta is centrally detached and the blood accumulates in the cul-de-sac formed by the firm adhesion of its margin to the uterine wall; (*b*) when the placenta is so detached that the blood escapes into the uterine cavity behind the membranes near the fundus; (*c*) when the membranes are ruptured near the detached placenta, and the effused blood mingles with the liquor amnii; (*d*) when the presenting part of the fetus so accurately plugs up the natural outlet that no existing hemorrhage can escape externally.

The circumstances leading to placental detachment Goodell found to be irregular uterine contractions, external violence, and undue exertion. In seven the causes were purely emotional, and ten took place during sleep. It occurs more frequently in multiparæ and in the latter months of pregnancy.

As to its frequency, Boivin and La Chapelle have denied its occurrence. In 22,498 confinements at Guy's Hospital it occurred but 3 times, and in 156,100 confinements at the Rotunda in Dublin it was not observed at all. Goodell was able to collect but 106 cases.

The symptoms, as stated by Lusk, are an alarming state of collapse, pain, often excessive, absence or extreme feebleness of labor pains, marked distention of the uterus, sometimes a lateral bulging of the uterine walls, a show of blood, a serous discharge, and blood in the liquor amnii.

The diagnosis in the concealed form may be extremely embarrassing. The pain is often that of flatulent colic. The accident likewise presents many features which resemble those of ruptured uterus, but rupture, by contrast, rarely occurs until after the escape of the waters, the presenting part then receding from the os and the uterus diminishing in size.

The prognosis is very unfavorable. Goodell reports out of 106 tabulated cases 54 mothers perished, and out of 107 children 6 alone are known to have been saved. Lusk has had a case since in which he removed, after labor, at least a basinful of firm clots from the uterine cavity, and yet mother and child both lived. He says: "In my own case the Barnes dilator acted capitally, not only enabling me to expand the cervix, but excited the uterus to contract vigorously. The serious symptoms set in after the membranes were ruptured, and compelled me to deliver with forceps."

In the *Medical News* of November 30th, 1889, Dr. W. W. Jaggard reports three cases of external and internal hemorrhage, without rupture of the amnion, in which the mothers recovered, but all the children were still-born.

In cases of external hemorrhage the diagnosis is easy and the prognosis more favorable—the latter probably because the walls are less flaccid than in the concealed form.

Treatment.—Subcutaneous injections of ergotin, dilatation

with Barnes' bags, in rupture of the membranes and in version.

CASE.

Mrs. F., æt. 33, white, always strong and healthy until after third confinement. First child, male, born November 29th, 1882. Labor normal, child healthy and still living.

Second child, female, born June 20th, 1884. Labor rapid, and lying-in normal till seventh day, when nurse used wrong nozzle of syringe and injected water into uterus. Violent uterine colic followed, but soon responded to treatment.

Third child, male, born August 7th, 1886. Labor normal, but followed by severe post-partum hemorrhage, from which she nearly lost her life. Child had trismus nascentium on the third day, and died on the fifth day. Mother recovered and gained strength, but became very nervous, and about one and a half months post partum developed mania and at times was violent; had hallucinations about the house and members of her family; uterus normal, urine normal. She was sent to the country with friends; returned in excellent condition, with mind clear, and quite cheerful.

Fourth child, male, born December 10th, 1887. Had examined urine three months before and found it normal. After this, patient failed to send urine for examination. When next sent for I found her in labor and progressing nicely, but was struck by her peculiar pallor. Insisted upon having urine, and on examination found it contained over three-fourths, by volume, of albumin. I made all preparations for rapid delivery in case of convulsions. The labor progressed, however, without a bad symptom, lasted six hours, and was in all respects the most normal labor I ever witnessed. After delivery albumin steadily diminished. The patient did well until the seventh day, when she had a chill followed by fever which lasted ten days and ranged from 102° to 105.3° , with rapid pulse and sweats. During this time the urine contained only a trace of albumin.

I was unable to explain the cause of the fever until I discovered that the nurse was visiting and nursing a case of childbed fever with "erysipelas of breast."

On the third day of normal temperature albuminuria again set in with intense headache, neuralgia, and vomiting. Gene-

ral anasarca followed, with some pleuritic effusion and edema of both lungs, followed by cyanosis and dyspnea. Eventual restoration of health. Six months later urine normal, and frequent examinations since have indicated no return of the trouble. Child had clubfoot (*talipes varus*). Applied splint and starch bandage for three weeks, resulting in a cure. Patient has been entirely well since until the fifth confinement, July 10th, 1889, when she presented the condition which is the basis of this paper.

Last menstruation appeared September 23d, 1888. Pregnancy normal, with no return of albuminuria or other bad symptoms, until July 10th, 1889. She was up and about the house, in perfect health and spirits, and after sitting upon a settee in her chamber for an hour or so, engaged in fancy work, became tired of her position and attempted to lie down. In doing so she suddenly turned herself around, at the same time elevating both limbs together so as to stretch out at full length. At the instant of doing so she was seized with a severe, sharp pain low down in her left side—or, as she described it, “in her womb”—followed with faintness and nausea, and shortly noticed that she was wet under her clothing, and concluded that the waters had broken. She was soon undeceived, discovering the flow to be blood, which was increasing steadily in amount, causing greater faintness and weakness.

This occurred about 2:30 p.m., and I arrived about 3:30.

She was then lying upon the bed, where she had been lifted, was very pale and blanched, with sighing respiration, could scarcely speak above a whisper. Her pulse, while distinctly felt at the wrist, was too rapid to be counted. The blood had flowed in such quantity as to pass entirely through the sofa to the floor, and there was a stream leading across the room to the bed. Her clothes were saturated, and clots had formed about the thighs and buttocks, while a small, steady stream poured from the vagina.

After removing the clothes, clots, and fluid blood, examination per vaginam showed the os to be dilated about the size of a silver dollar, membranes very thick, while a flow of hot blood could be felt pouring out from the os.

The uterus appeared to be inert and flabby, and upon intro-

ducing the finger into the os and sweeping it around in all directions, no part of the placenta could be felt. Pains were entirely absent, and she was growing steadily and rapidly weaker.

The uterus was normal in size and consistence, but on the anterior left aspect there was a decided irregularity or bulging. Auscultation at this point revealed absence of sound, but around it the placental or uterine bruit was well marked. The diagnosis of partial separation of placenta was made at once. I was alone, out of telephonic communication, without any instruments, and with the patient dying from hemorrhage.

I concluded that the only hope lay in the tampon checking the hemorrhage. I endeavored to introduce one, but failed, and the attempt was so painful, the patient using what little strength she had left to complain, that I discontinued my efforts and went in search of assistance and instruments. Upon returning I found the bleeding had subsided considerably, but the patient was much weaker. I removed all clots from vagina, and, introducing speculum, proceeded to tampon. I had discovered that the membranes were very tough and non-adherent at lower uterine segment; so, in the absence of a Barnes' bag, I carefully introduced the strip of cotton, previously saturated with carbolized vaseline, into the cervix through the os.

These manipulations at first caused the bleeding to increase, but I continued the work with all possible speed until I had gotten all that was possible into the uterus. I continued the operation until the vagina was distended to its utmost, and completed it by applying a firm bandage over the vulva and abdomen, including a compress over the uterus. All bleeding now ceased, and the patient, much to my relief, began to gain strength and show improvement in the pulse.

I examined and found the fetal heart beating, but never expected it to pulsate outside of that uterus. In the course of half an hour pains began to set in and became quite strong. A very noticeable feature at this stage of the case was that every pain, contrary to my expectations, seemed to add to the patient's strength.

I then left to procure my instruments, etc., and on my

return found the patient much stronger and having strong and regular bearing-down pains. Examination showed the bandage and tampon entirely dry. Shortly the tampon commenced to be pressed out of the vagina, so I removed the bandage and proceeded to draw on the end of the continuous cotton strip forming the tampon. As I did so the head followed rapidly downward and the child was born at 5:30 p.m.

The funis was long and not around the neck, and the child, though apparently dead, was easily resuscitated. The liquor amnii was not mixed with blood; a large amount of clotted blood came away with the secundines, which were removed by Credé's method.

The opening in the membranes through which the child passed was almost opposite the placenta.

The placenta showed clearly the portion separated, which was about one-fourth its surface and at a point farthest from the insertion of the funis. It was a battledoor.

The mother improved steadily without a bad symptom, and is in perfect health to-day.

The child had a clubfoot (left talipes varus), which was treated with splint and starch bandage, and resulted in a cure.

The differential diagnosis in this case had to be made between placenta previa, rupture of lower portion of cervix or corpus uteri, and partial separation of placenta. I will not take up the time of the Society to go further into this subject, as the diagnosis presented no difficulties whatever.

TWO CASES OF PHLEGMASIA ALBA DOLENS.

BY

PAUL CLENDENIN, M.D.,

Asst. Surg. U. S. A., Eagle Pass, Texas.

CASE I.—I was called, August 25th, 1886, to attend Mrs. C., an Englishwoman of about 30 years of age, in her third confinement. Her appearance was that of an overworked, underfed woman with a suspicion of previous syphilitic

trouble, which suspicion, however, I was unable to confirm. Her present condition, except that her vitality was somewhat below par, I considered good, and she was cheerful and brave in bearing her pains, which were strong and regular. After a short and uneventful labor she was delivered of a vigorous child, the placenta was delivered entire and with ease, and I left her resting comfortably with an even pulse and a well-contracted uterus. The following two days were without an untoward symptom—temperature normal, after-pains not frequent or severe, lochia normal. But on the 28th she complained of pain in the left leg and thigh, or, as she described it, her leg felt at first as if it were asleep, with now and then prickling pains shooting about. This, she said, she had felt during the night, the first pain having been noticed within twelve hours. Examination showed the limb considerably swollen, particularly the thigh, with a faint blush over the course of the femoral vein from about two inches above the level of the superior border of the patella to the inguinal region. The swelling was not so marked in the leg, except posterior to the malleoli, where also there were reddish lines, apparently marking out superficial veins. The skin of the thigh was tense, white, and shining. There was no tenderness on pressure, except over the vein, in which I was unable to discover any signs of the presence of thrombi. Unfortunately I had not my thermometer with me and was unable to ascertain her temperature. The woman described her sensations as follows: The leg seemed to her to belong to some one else until she tried to move it, when it became very much her own, and a series of pains would shoot in every direction over and through it; furthermore, it felt so stiff and the skin seemed so tight that it appeared to her as though the skin would burst if she tried to move the leg. I at once realized that I had to deal with a case of phlegmasia in an exceedingly early stage, the woman assuring me that she had first noticed the swelling not more than three hours before my visit. It seemed to me that, seeing the disease at so early a stage, I ought to be able to abort it and so save this woman the long weeks of suffering that I had been taught was the lot of the unfortunate woman with this affection. I had recently been having marked success in the treatment of a number of cases of epididymitis by

means of absolute rest and the constant application of the following evaporating lotion, as suggested by Mr. Milton, of London, in his excellent work on "Gonorrhea":

R	Liq. Ammon. Acetatis.	℥ i.
	Spir. Ætheris.	℥ iss.
	Mist. Camph.	℥ iiiss.
M.	Fiat lotio.	

I determined to try the efficacy of the lotion in this case, as it appeared to me to be so far a simple phlebitis, and I hoped to be able to prevent the formation of thrombi by subduing the inflammation of the vein, if possible. I therefore swathed the entire limb with old linen and ordered that it be kept wet with the lotion, at the same time impressing upon the patient the necessity of keeping perfectly quiet, and administered gr. $\frac{1}{4}$ morph. sulph. by the mouth, leaving a like quantity to be taken at bedtime. At my visit next morning the swelling was appreciably diminished and the pain considerably alleviated. My attention was called to the mottled appearance of the post-malleolar region of the *right* ankle, together with some swelling. This had just been detected by my patient, her attention having been directed to it by what she described as a feeling precisely similar to that which she had felt in the other extremity when first attacked. I directed the same treatment to be applied on the right side, but the bandage to be limited to the ankle and leg. There was no increased temperature, and the patient expressed herself as feeling very comfortable. The third day there was no pain whatever in either extremity, and nothing but a stiffness about the left knee and both ankles reminded this woman of her former condition. There still remained, however, a slight bluish discoloration along the course of the vein of the left thigh, and a mottled, reddish, and swollen appearance of both post-malleolar regions. The lotion was ordered discontinued except along the vein and to both ankles. The fifth day everything had disappeared but the discoloration and swelling about the ankles, and the nurse was directed to rub them with a simple liniment night and morning. I did not see the patient again for some weeks, when she told me that the discoloration of the ankles had faded off like a black eye.

CASE II.—November 6th, 1887, I was called to see a Mrs.

S., a young woman of about 20 years, living in a "dugout" ranch near my post, who had been delivered, five days before, of her second child with the assistance of a neighbor. I found her suffering a great deal of pain, very restless and with considerable fever—my notes do not record the degree, but my recollection is that it was 102.5° or 103° Fahr. Examination disclosed an enormously swollen thigh (the left), skin tense and glistening, white in color with a broad red band two inches or more in width over the course of the vein, pitting but slightly on pressure, brawny in feel, and exquisitely painful on pressure, the tenderness increasing as the area of redness was approached. I learned that she had noticed the pain and swelling the day before, and when the pain became so severe she could not stand it she had asked her husband to go for me. As near as I could learn, I saw the case within thirty-six hours of its incipency. Other symptoms present were dry, coated tongue, foul breath, constipation, and scanty lochia. I gave her a brisk purge, a copious vaginal irrigation of hot water with 1 : 6,000 of mercury bichlor., ordered flannels, wrung out of water as hot as she could bear, placed over the hypogastrium—this with a view to promote a more copious discharge of the lochia. Then I turned my attention to the swollen thigh. Remembering my success a few months previous, I determined to attempt to subdue the inflammation as before, though with less hope of success, as this case was a much more serious one and the process farther advanced. I was unable to determine in this instance as to the formation of thrombi, on account of the sensitive condition of the limb. I therefore bandaged the limb from the middle of the leg to the inguinal region, and directed the neighbor who was to act as nurse to keep the bandage constantly wet with the lotion I would send. I administered gr. $\frac{1}{4}$ of morph. sulph., and cautioned the patient to keep absolutely quiet, not moving the affected limb at all. Unfortunately I was obliged to be absent for a week, and so was unable to watch the progress of the case; but on my return I found that the woman was "all right," as her husband expressed it. I saw her not long afterward, and she informed me that the pain ceased within twenty-four hours after the application of the lotion, and the swelling disappeared inside of three or four days, and that at the end of a week she

"never would have known that she had been sick." She had kept up the use of the lotion until the end of the fourth day, when, everything but a little stiffness and dead feeling in the thigh having disappeared, she discontinued it.

I have reported these two cases for several reasons. In the first place, they are remarkable from their occurrence early in the puerperium. In the second place, there appeared to be no formation of thrombi, either primarily or secondarily. In the third place, the ready and prompt yielding to treatment is unusual; and in the fourth place, the treatment differs considerably from what is generally taught as the proper course, and is considered worthy to be recorded in view of its success.

Such authorities as I have been able to consult agree in placing the occurrence of phlegmasia in from the second to the fourth week after delivery, or even later. They do not agree, however, as to the pathology. Playfair, King, and Loomis insist upon the presence of thrombi as essential. "But it is beyond any doubt that the important and essential part of the disease is the presence of a thrombus in the vessels . . ." (Playfair's "System of Midwifery," 3d Am. ed., p. 614). "Formation of blood clots (thrombi) in the affected venous trunk is, at present, most generally admitted as the starting point of the local phenomena . . ." (King's "Manual of Obstetrics," 1st ed., p. 285). "The presence of a clot may be regarded as an essential accompaniment of all forms of phlebitis except the adhesive or chronic. . . . The commonest cause of phlebitis is the formation of a thrombus" ("Practical Medicine," Loomis, 8th ed., p. 554). Lusk holds that "phlegmasia is an affection of the connective tissue, and is associated in most but not all cases with thrombosis of the veins" (Lusk's "Science and Art of Midwifery," 2d ed., p. 655). He further states that the thrombi may be primary or secondary. Andrew H. Smith, in his article on "Diseases of the Veins" in Pepper's "System," says: "As already stated, acute phlebitis plays a very important part in the affection known as phlegmasia alba dolens, or white-leg. Indeed, many writers consider that it is the only essential factor in the affection. . . . At all events, whatever may be the exact pathology of the affection, it appears to be certain that an abnormal condition of the blood, favoring the formation of coagula in the

veins, is an essential prerequisite ("System of Medicine," Pepper, vol. iii., p. 846).

Milne and Charpentier are more positive in regard to phlegmasia being a phlebitis: "The theory is now generally held that the affection is due to an inflammation and obstruction of the crural veins; that the disorder is in fact a crural phlebitis" ("Principles and Practice of Midwifery," Milne, 2d ed., p. 306). "To-day it is believed to be a phlebitis, but of a peculiar kind" ("Cyclopedia of Obstetrics and Gynecology," vol. iv., p. 340).

Virchow, as I learn from many references to his writings (I have not access to them at present, and for this reason cannot quote), holds that the primary step in phlegmasia is a physiological coagulation of the blood in the vein, all the other phenomena springing from this as a cause. Cornil and Ranvier take some exception to this assumption as too broad: "From the preceding description it is seen that coagulation of the blood accompanies phlebitis; until a few years ago it was believed that every coagulation of the blood in the veins was caused by the phlebitis. Virchow endeavored to show that primary phlebitis is extremely rare, and that when a coagulation is seen in a vein with phlebitis the coagulation has most frequently preceded the inflammation. This theory, which seems to us too positive, has, however, been accepted by most German pathologists" ("Pathological Histology," Cornil and Ranvier, Am. ed., p. 340).

From the above quotations I think it is fair to conclude that the preponderance of authority is in favor of the view that phlegmasia is a phlebitis, though of a peculiar type. As to whether the attendant thrombosis seen in the vast majority of cases is the cause or the effect of the inflamed state of the veins I cannot pretend to decide, but the two cases recorded above prove to my mind that there are cases in which the phlebitis is primary and in which the formation of thrombi can be avoided. I am confident that there was no thrombosis in these cases, for I cannot believe that, had there been thrombi, their resolution could have been effected in the short time that was required for the disappearance of all the symptoms.

The treatment is respectfully submitted to the favorable consideration of the profession, with the hope that its applica-

tion will prove the existence of a much larger proportion than is now generally believed to exist of cases of phlegmasia that are primarily simple phlebitis.

CORRESPONDENCE.

DR. BACHE EMMET'S CASE OF PREGNANCY IN WHICH IT IS ALLEGED THE OVUM PASSED ENTIRE FROM THE TUBE OUT THROUGH THE UTERINE CAVITY.

TO THE EDITOR OF THE AMERICAN JOURNAL OF OBSTETRICS, ETC.

SIR:—As this is the second case published in which this remarkable ending is asserted for a tubal pregnancy, and as I have already criticised the first instance, I trust you will allow me to say a few words concerning the present. I desire the more to do so as I wish to correct a misstatement made by Dr. Grandin during the discussion which followed the reading of Dr. Emmet's paper.

Dr. Grandin said that "it was another instance of what might happen contrary to the dictum of Mr. Tait. This specimen, according to Mr. Tait's published views, should have found its way between the folds of the broad ligament, and should not have entered the uterus." It is perfectly clear that Dr. Grandin either has not read my book at all, or, if he has read it, he has entirely misunderstood it, and, as reported, he grossly misrepresents me.

My book, as I state at its very beginning, and as I hold all the way through, is a record purely of my own personal experience and of the conclusions I am disposed to draw from it. I say that all the cases of tubal pregnancy which have fallen under my notice, some eighty-five in number, have ended in one of two ways, either by rupture into the peritoneal cavity or into the cavity of the broad ligament. I say little as to what has happened to the cases of other people, and certainly nothing as to what ought to happen to them. My only

dictum is about facts of my own cases, and Dr. Grandin is not in a position to criticise that. As to what may happen and what may yet be proved I say nothing, for I have not yet ventured into the realm of prophecy. But I have now literally exhausted all the accessible specimens of tubal pregnancy, numbering many hundreds in various collections, and I now can say that I have seen not a scrap of evidence in support of the possibility of the occurrence of such a phenomenon as that narrated by Dr. Bache Emmet; in fact, all that I have seen goes to establish the conclusion that such an ending for a case of tubal pregnancy is a physical impossibility. Further, I am so familiar with the facility with which errors are made in the physical examination of the pelvis, even by the most expert and experienced practitioners, that I absolutely refuse to accept any such improbability without the evidence of intra-abdominal examination either by abdominal section before death or by cadaveric section after it.

Finally, there is such an easy explanation of what Dr. Emmet thinks he saw, the conditions of which are so common and so well understood, that I am surprised that it did not occur to the mind of any one engaged in the discussion. Leaving Dr. Bache Emmet's conclusions out of the question altogether, but accepting entirely the facts as he gives them, it is clear that he was dealing with a bifid uterus, one half of which was pregnant and the other empty. He passed his sound into the empty half, and he succeeded by his electric currents in procuring abortion in the pregnant half, for which proceeding there was not the slightest need nor justification, according to his own story; then the decidua were discharged from the unimpregnated half—*et voilà tout!* A precisely similar but much more amusing blunder occurred to one of my former assistants in a case of double uterus and double vagina. He was examining by one canal whilst the baby was steadily making its way down the other.

I am, etc.,

LAWSON TAIT.

PROCEEDINGS OF THE THIRD
ANNUAL MEETING OF THE AMERICAN
ASSOCIATION OF OBSTETRICIANS
AND GYNECOLOGISTS.

HELD IN PHILADELPHIA, SEPTEMBER 16TH, 17TH, AND 18TH, 1890.

(Abstract.)

FIRST DAY—MORNING SESSION.

The Association met in the upper lecture room of the College of Physicians, and was called to order at 10 o'clock by the President, DR. E. E. MONTGOMERY, of Philadelphia.

The address of welcome was delivered by DR. WILLIAM F. WAUGH, of Philadelphia, who, in the name of the profession and of the citizens, welcomed the Association with fitting words.

DR. ROLLIN L. BANTA, of Buffalo, one of the vice-presidents, responded, referring, in the course of his remarks, to the importance of Philadelphia as a medical educational centre, and to the renown many of her physicians had attained.

DR. E. E. MONTGOMERY delivered

THE PRESIDENT'S ANNUAL ADDRESS.

He expressed his pleasure at presiding over the third meeting of this young and vigorous Association. Three and one-half years ago sixteen of us met in a hotel in Buffalo and with many misgivings set adrift the fledgling known as the American Association of Obstetricians and Gynecologists, an organization now numbering its members from every portion of the Union; an organization whose two volumes of Transactions have been received with high commendation both at home and abroad. The approbation of the work accomplished, the rapid growth of the organization, and the friendly rivalry of other societies fully justify the action of its founders.

He congratulated the Association upon the fact that during its three years death had not invaded its ranks. Referring to the progress made in abdominal surgery during the last fifteen years, he said the rapid development of this department of surgery and the multiplicity of operative procedures have

frequently led to the charge of errors in judgment and to too frequent surgical interference. That this charge is sometimes just is doubtless true; indeed, when we note the transformation from grave invalidism to complete health under surgical interference, it is not surprising that some patients who have simulated similar symptoms have been subjected to an unnecessary operation. Unfortunately, it is only by experience that we are enabled to grope through the obscurity of disease to that light which insures us a proper knowledge of situation and relation. He was confident from his own experience that many more frequently suffered and died from want of abdominal operation than from its too frequent performance; so impressed has he been with this fact that he felt that his time could not be better occupied than in the consideration and determination of some of the conditions which require prompt abdominal operation. Of these conditions may be named suppurative peritonitis. Suppurative peritonitis, however, may arise from a variety of conditions, and manifests itself in different ways, and requires different plans of treatment. This may arise from the rapid entrance of irritating fluid through the patulous Fallopian tube following parturition or abortion. Or, again, the poison may be in its specific character; in this class of cases the peritonitis rapidly becomes general, and only prompt treatment on the part of the physician will save the patient. Again, suppurative peritonitis may occur as a result of inflammation about the appendix vermiformis. Ordinarily in inflammation of this tube nature has had sufficient warning of the impending rupture and has thrown out barriers which glue the parts together, forming a sac or abscess cavity. In some cases this tube may be patulous, the opening large, and the barrier rapidly swept away; in such cases the life of the patient is dependent upon the promptness and judgment of the physician. Where the abscess is encapsulated it is not always wise to attempt a removal of the appendix, but we must content ourselves with irrigation and drainage, leaving any fistula that may result subject to further consideration and treatment. Where abdominal incision shows that an abscess sac can be better reached posteriorly or laterally, the peritoneum should not be disturbed. Suppurative peritonitis may also be a result of insufficient or no drainage after abdominal section; in such cases thorough and frequent irrigation should be used where a drainage tube is present, and drainage at once used where it has been absent. Perforation is no less indicated in cases of severe obstruction, whether it is due to hernia, volvulus, intussusception, or some form of constriction. In hernia, prolonged, persistent taxis is criminal; in other conditions no case of stercoraceous vomiting should be permitted to continue longer than a few hours

without operation. The wisdom of prompt operation in cases of penetration of the abdomen after gunshot injuries but few will question; it is fully as important that stab wounds should be enlarged and the abdominal cavity irrigated and drained. There is a class of intestinal injuries, received through kicks and blows, in which no external lesions are perceivable; these may frequently give rise to serious trouble within the abdominal cavity, as rupture of the intestinal tract, liver, or spleen. In any case where the symptoms are subsequently grave, an exploratory incision should be made. By so doing we but slightly increase the danger to the patient. If any lesion exists, secure an opportunity of determining its character and remedying it where serious injury has occurred.

In a paper upon ectopic pregnancy read before this Association two years ago, he had taken grounds with reference to the value of electricity in the earlier months of this condition. These conclusions had been founded upon the experience of others; his own later experiences, however, had led him to conclude that these views were erroneous, as it was very rare indeed that the condition could be determined prior to rupture, and in those cases where rupture had not occurred the susceptibility of the fetus to the influence of the electric current was exceedingly variable. In some cases the current, as strong as could safely be borne by the patient, was used by experienced electricians without influence upon the growth of the embryo, and it required subsequent operation to save life. In cases of rupture it may be necessary to operate from inference; rather than from any positive indications of the presence of this condition; the object of the operation is to save the life of the individual, not to confirm the diagnosis.

The first paper was read by DR. JAMES P. BOYD, of Albany, entitled

SOME FACTS RELATING TO THE DIAGNOSIS AND TREATMENT OF
PLACENTA PREVIA.

The diagnosis of hemorrhage due to abnormal insertion of the placenta is not, as a rule, difficult; still the physician should thoroughly understand all the conditions which are liable to induce hemorrhage during pregnancy, and carefully investigate the source of the flowing in each case.

Some women have underrated the importance of the first flowing in placenta previa, or have been led to believe that it was a return of the menstruation, and consequently have not notified their physicians until the hemorrhage has become alarming.

Again, physicians are occasionally misled by hemorrhage due to disease of the cervix, rupture of vaginal veins, or even malignant disease.

The paper of Dr. A. E. Aust-Lawrence is valuable as an aid in the differential diagnosis of hemorrhage during pregnancy.

Although modern methods of treatment have rendered the prognosis for the mother in cases of placenta previa more favorable than in the past, still the fetal mortality, as Thomas expresses it, "leaves much to be desired."

Discussion.

DR. WILLIAM WOTKYN'S SEYMOUR, of Troy.—This subject is of interest to me, inasmuch as I had recently in my own practice a fatal case of placenta previa. In listening to Dr. Boyd's paper, one fact which he referred to impressed me with particular importance, viz., that it is not merely the immediate mortality of the children but their viability that should command our attention. I think, as Lomer showed in his paper—probably founded on the worst cases the practitioner ordinarily comes across, handled by midwives, good, bad, and indifferent—that in the treatment advocated in Dr. Boyd's paper, by the employment of Braxton Hicks' method without extraction of the child, lies our safest method of treatment. For if extraction is immediately made, unless great care is exercised by the operator there are apt to result lacerations of the cervix, the vagina, or lacerations high up in the supravaginal portions, which may prove fatal. My own individual preference has been the combined treatment, leaving the expulsion of the child to nature. In two of the three cases I had the unpleasant experience of being obliged, some hours after delivery, to anesthetize the patient and sew up quite a large tear in the infravaginal portion of the cervix, and in another to put a deep suture in the vault of the vagina to control the hemorrhage coming from the uterine artery. The patient recovered.

In the three cases I lost two of the children. The first case was a head case in which the placenta was partially separated, and Taylor's narrow-blade forceps was applied to bring the head down to the cervix to act as a tampon. Lomer shows that in the vast majority of cases where the children are delivered alive they die in a short time. If we are able by the combined method to save a larger proportion of the women, the life of the child should not count for much. I should, from my own experience, enforce the advisability of the practitioner going prepared to ligate or suture any tears of the cervix or vagina, or take up the uterine artery.

DR. R. L. BANTA, of Buffalo.—Some four years ago I presented a paper on this subject to the New York State Medical Association, and in it I threw a heavy stone at the tampon. The tampon is very useful in the right place, but not

as ordinarily employed by general practitioners. I speak from an experience of seventeen cases of placenta previa seen in my practice, and I am justified by that experience in entering my strong protest against the employment of the tampon in the treatment of placenta previa. If we keep dirt away, no matter whether we use Barnes' dilators or Braxton Hicks' method, the results will be a great deal better than we have had in the past.

DR. JOSEPH PRICE, of Philadelphia.—Dr. Banta has alluded to the importance of cleanliness. Ten years ago, a period antedating the new doctrine of scrupulous cleanliness, physicians always washed their hands *after* doing surgery or making obstetrical examinations. The rule was to enter the room and throw down the sealskin gloves that had been used five or six years, make an obstetrical examination, and then *wash* their hands.

I recall a case alluded to in Carl Braun's practice, in which the case was delayed some ten or fifteen or twenty hours to build the woman up, to strengthen her. A prominent obstetrician here told me he did the same thing. He gave the woman sixteen pints of beef tea, elevating not only her hips but the foot of the bed. He succeeded in delivering her of a living child. He decided when he first saw her that it would be impossible to deliver either mother or child safely. She was simply dying. He attempted to save her, and saved both by preparing for delivery. In many cases this is a delicate point to decide, because another hemorrhage may be the feather to depress the beam.

I wish to ask Dr. Boyd one question. He calls attention to having to curette in one case. Have you any record of the intra-uterine treatments that antedated these conceptions?

DR. BOYD.—Of that I do not know.

DR. A. VANDER VEER, of Albany.—I wish this paper might be put in the hands of every young practitioner. I believe, as I remember the cases I have seen in the past, that much harm comes from tamponing, and that the practitioner who uses the tampon is the one who most frequently finds it necessary to call some one in consultation. Dr. Price has said this is but a branch of surgery, and that is true. That which impressed me most about Dr. Price's remarks is that in the minds of many there is a desire to deliver quickly, and this is a great mistake. Turning, delivering carefully and slowly, using the child as a tampon, as it were, dilating the part somewhat, we do great good to our patient. We save some of the children and more of the mothers, I believe, by this method. I have not been favorably impressed with Mr. Tait's remarks in regard to the necessity of doing the Porro operation in these cases. If there is anything I would add to

Dr. Boyd's paper, it would be to show the importance of not doing anything which would add to the shock the patient is suffering from.

DR. AUGUSTUS P. CLARKE, of Cambridge, presented a paper entitled

ADHERENT PLACENTA: ITS CAUSES AND THE MANAGEMENT.

Of the many complications of labor occurring at full term, the adherent placenta has been found far from being the least in importance. The abnormal adhesions are the result of an inflammation of the placenta or of the uterine tissue during utero-gestation. There occurs an exudation of plastic and coagulable lymph between the adjacent surfaces.

The author refers briefly to the teachings of some of the older writers, and also makes mention of two cases that occurred in his earlier practice. In each case the adhesions were so firm that it appeared quite impossible to remove every portion of the placenta. The first patient, Mrs. C., age 40 years, was very tall, and her weight was 205 pounds. She was of Norman-French descent. This was her third confinement. Four years before this pregnancy she was delivered of her first child, which was still-born, the membranes having ruptured two weeks before labor pains came on.

Her recovery then was somewhat slow. Her second labor was natural, lasting twenty-four hours. She recovered fairly well. This confinement occurred twelve and a half months prior to the third. At that time Dr. Clarke was also in attendance. In all her pregnancies she suffered much from edema and renal disturbances. Before the sixth week of the last pregnancy she suffered greatly from nausea, from morning sickness, and from painful sensations in the uterine region. There was a marked anteversion of the uterus. For the first two hours after his arrival the pains were strong and regular, the os and cervix were well dilated. After the lapse of two hours more the child was born. It appeared healthy and well developed, but the funis was hardly of sufficient length to allow an easy exit of the child. Kneading the uterus, and the exercise of suprapubic pressure, were early resorted to; but after the lapse of an hour, the placenta not descending, the hand was introduced into the vagina toward the uterus. On reaching the uterus it was quite impossible at first to enter the cavity, owing to the firm and irregular contractions above the neck and in the centre of that organ.

By perseverance the stricture was overcome and an entrance gained into the uterine cavity. The placenta was on the anterior and to the right of the uterus. The greater portion of the placenta was removed, but not all of it. The

patient struggled and finally became much exhausted. A consultation later was held, and also on the second day, but further manual interference at that time was not considered advisable. On the evening of the third day a piece of the placenta two inches long and one inch in depth with some clotted blood escaped. The next day a piece as large as a hen's egg was expelled. Soon after the temperature became normal. The patient rapidly gained in strength and made a good recovery. In the treatment of the other case the first and second stages of the labor were easy, but the placenta was found firmly adherent to the uterine walls and could only be partially removed. The patient, as in the other case, became quickly exhausted, and then further manual interference had to be discontinued. Local and constitutional measures were instituted at once, but she was not as fortunate in getting rid, at so early a date, of the retained portions of the placental mass. She ultimately recovered. This patient, some four years before, gave birth to a child, at nearly full term, in an advanced stage of decomposition. She had suffered immediately previous to her last pregnancy, as well as during that period, from renal troubles. There was a history of leucorrhœa and cervical catarrh. Since the occurrence of the above-mentioned cases many great improvements or advances have been made in the obstetric art. Ether, when now used with care and discrimination, is no longer considered a depressing agent, but one of great value in overcoming pain and in arresting, in great measure, irregular uterine contractions.

The great advance made in surgical and gynecological practice assures us that many manipulations within the vaginal introitus and uterine cavity, heretofore considered dangerous, may be done with impunity when undertaken in connection with irrigation of warm sublimate solutions and with other strictly antiseptic precautions. In the treatment of two other cases of adherent placenta, Dr. Clarke fortunately succeeded, in each case, in removing the entire placental mass.

After the patient was fully etherized the right hand was inserted into the uterine cavity in front of the funis, while firm but gentle pressure was maintained over the fundus uteri externally. A long, blunt curette was used to detach the more firmly adherent portions not readily removable by the fingers. The parts were freely irrigated with the warm bichloride solution. At the close of the operation all the sublimate solution was removed. The parts were dusted with iodoform and protected with iodoform gauze and wool.

Massaging and kneading the upper segments of the uterine tissue aided in the control of the hemorrhage. Each patient made a rapid and complete recovery, without suffering any serious constitutional symptoms. The author of the paper

refers again to the more recent and accepted authorities on adherent placenta, and closes with a report of the following case which recently came under his care: Mrs. B., age 30 years, mother of two children, the younger of whom was 3 years, was taken in labor at 4 A.M. November 1st, 1889. The labor pains at first were moderate, occurring at intervals of fifteen to twenty-five minutes. The pains were described as being felt in the abdominal and uterine section. Each pain as it occurred was attended with an unusual and sickening sensation, which was referred to the anterior and to the left of the uterus. Abdominal palpation revealed that there was a vertex presentation. The placenta was in the upper and the occiput in the lower uterine segment. This condition could be distinctly made out by means of abdominal palpation alone.

The placental mass appeared harder, more prominent and unyielding than normal. This condition, taken in connection with the history of pain more or less severe for several weeks preceding, was indicative of pathological changes which could be regarded only as of serious import. The second stage of labor, however, progressed favorably, and the child was born at 12 o'clock that day. Kneading and suprapubic pressure were methodically carried out for some time immediately before, during, and after the passage of the child, but after the lapse of an hour there was still no separation of the placenta. The patient was then profoundly etherized. Under the strictest antiseptic precautions the hand was passed up into the uterine cavity. The fingers and hand were kept as far as possible from the uterine surface, guided within by the circle of the membranes, avoiding by all possible means their laceration. The placenta throughout was adherent. By the exercise of much care and patience the entire placental mass was removed, though it was much broken and rendered quite unshapely. The curette and twisted wire hook were again found to be of special use in detaching the smaller and more adherent masses of tissue. The uterus finally contracted well, except at the placental site, where evidently degenerative changes had taken place. She speedily recovered, there being no febrile or other constitutional disturbances.

DR. WILLIAM S. GARDNER, of Baltimore, then read a paper on

THE RELATION OF ALBUMINURIA TO PUERPERAL CONVULSIONS.

It is stated that the object of the paper is to record a few observations that have some bearing upon the prognosis in cases of albuminuria during pregnancy, and also upon the possibility of the prediction of puerperal eclampsia.

The observations include a report of the percentage of

cases of albuminuria discovered in 180 pregnant and parturient women taken consecutively, and an abstract of the records of the cases of eclampsia that occurred within the selected period, and also a few other cases of eclampsia the urine from which had been examined previous to the convulsions.

Of the 180 patients whose urine was examined, 96 were primiparæ and 84 were multiparæ. It was found that $5\frac{1}{2}$ per cent of all cases had albumin in their urine in greater or lesser quantities before labor; that the first day after labor albumin was found in $12\frac{2}{3}$ per cent; and that on the eighth day after labor albumin was found in $9\frac{5}{6}$ per cent. Albumin was found one or more times in 36 of the 180 cases, or in just 20 per cent. Albumin was found one or more times in 23 per cent of the primiparæ and in $16\frac{2}{3}$ per cent of the multiparæ.

Included in this series were 4 patients who were attacked by puerperal convulsions. Of the 4, in only 1 case was the presence of albumin detected before labor; in 3 cases large quantities of albumin were present soon after the convulsions; in 1 case there was never any albumin present, and in 1 there was no albumin present twenty-four hours after the convulsions.

In a fifth and more recent case a trace of albumin was found in the urine at one examination before labor. The urine that was in the bladder at the time the first convulsion came on contained no albumin, while the presence of a small quantity of albumin was detected in the urine which was secreted a few hours later.

In 10 cases reported in Elliot's "Obstetric Clinic," the urine from each of which was examined before the labor came on, the presence of albumin was detected 4 times, and its absence ascertained 6 times.

Adding these cases to the ones related, we have 15 cases of puerperal convulsions. The urine from each case was analyzed before the convulsions came on. Albumin was found 6 times, and it was not found 9 times.

The number of cases here presented is small; but if we are allowed to consider them average cases, we are warranted in drawing the following conclusions:

1. The presence of albumin in the urine of a pregnant woman is not sufficient cause upon which to base a prediction of probable eclampsia.

2. The failure to find albumin in the urine of a pregnant woman is no evidence of the absence, or at least the continuance of the absence, of the condition that gives rise to puerperal convulsions.

3. Albumin is so frequently found in considerable quantities in the urine of patients immediately after the appearance of puerperal convulsions that we are justified in making the

statement that the convulsions are the probable cause of the albuminuria.

FIRST DAY—AFTERNOON SESSION.

DR. LLEWELLYN ELIOT, of Washington, D. C., read a paper on

TINCTURE OF IODINE IN HYPEREMESIS GRAVIDARUM.

He referred to many authorities to show the purpose of the vomiting of pregnancy, but dealt mostly with the treatment of this annoying phenomenon. After quoting the views of several writers on the treatment of vomiting of pregnancy, he advocated the use of the simple tincture of iodine, and briefly recited the histories of two cases in which, among others, he had successfully employed this agent. He referred to an error of quotation occurring in Edgar's translation of Winckel's "Text Book of Midwifery," where Dr. Eliot is recorded as having used tincture of iodine in the persistent vomiting of pregnant women, with fatal result. This is a mistake, as the quoted history of the case, published in the *Medical Record*, vol. xxxii., page 422, shows. The use of the iodine was followed by marked success.

DR. GEORGE H. ROHÉ, of Baltimore, read the next paper, upon

THE PRACTICAL TEACHING OF OBSTETRICS IN THE UNITED STATES.

He gave a history of the maternity hospital services attached to medical schools in the United States, and described the methods pursued in the Maryland Maternité, under his charge. This institution is used almost exclusively as an obstetric clinic for the benefit of the students attending the College of Physicians and Surgeons of Baltimore.

Strict antiseptic precautions are carried out in the hospital, and, although every case is examined twice by eight or ten students, no serious case of septic infection and no death from any septic disease has occurred in the last 377 deliveries, from September 1st, 1887, to September 1st, 1890. The antiseptic used is mercuric chloride, 1 : 1,000 for the hands, 1 : 4,000 for vaginal and 1 : 5,000 for intra-uterine douches. The latter are only given in operative cases, when the hand has been for any reason introduced into the uterus, or in the event of a rise of temperature post partum indicating septic absorption.

The training of nurses for obstetric cases is part of the work of the Maternité. Young, neat, and intelligent women are sought after. They are required to remain in the hospital for

six months, and must also study some text book of obstetrics during their term of service. At the end of the six months they are subjected to a rigid examination.

"Touch courses" are given to the students, divided into small sections. Attendance upon these courses is obligatory.

Dr. Rohé states that his inquiries show that in all public maternity services in this country antiseptic measures are employed, and, as a result, puerperal fever, so-called, has been practically wiped out in American obstetric hospital practice.

Discussion.

DR. A. H. WRIGHT, of Toronto.—I have always thought it was perhaps the weakest point of our system of medical education that we have not been able to give our students clinical advantages in obstetrics. The advantages of a place like Dublin are great. A worthy and industrious student there has any and every opportunity. We have in Canadian schools rules which compel all students to see at least six cases of obstetrics before graduation. For some years it was found that the mortality rate was too high. We then introduced antiseptic methods, carried out very much after the plan described by Dr. Rohé. Still we found our mortality record was not a desirable one. Then we stopped the indiscriminate examination of women by students. Our rule now is that one student is allowed to examine the patient—that is, make a vaginal examination; but we encourage all the students to examine by abdominal palpation. This is one of the things which will help along wonderfully antiseptic obstetrics. I think we have learned a great deal from surgery in the way of applying antiseptic methods to obstetrics.

DR. JOSEPH PRICE, of Philadelphia.—Dr. Rohé has done much to stimulate medical schools and philanthropic people controlling maternities to educate young physicians in some refinement in maternity work. As a rule, this is the first work a young physician has to deal with. It is his loaves and fishes, his rent and income; whereas it is just the subject in which he is the most deficient. Until the last few years all medical schools have done nothing in the way of practical instruction in this field. It is curious what opposition we have had; it is most lamentable. Speaking for myself, as a director of two maternity hospitals, had I six daughters I would want these institutions to practically educate more men in obstetrics, that my daughters might have skilled obstetricians to take care of them in the perils of childbirth. The gentleman who has just taken his seat has discoursed delightfully on this subject, but seems to take a little ground against using some of this public material for educational purposes. I feel that every pauper in the land should be used for this purpose

from sunrise to sunset. He has said considerable about filth. Your students are your children. I consider a medical college next in dirt and filth to the livery stable near by. There is no reason why medical schools should not be as clean as this room or a church, and if we will only take high grounds on this subject they will be shortly. For three years you are ashamed of your sons; they contract all sorts of abominable habits: they go from home with clean finger nails, and they come home with them in deep mourning.

Maternity work needs a surgical refinement—the highest possible degree of it. In all maternity work I have tried to do just that, and I have distanced all dirt, and all now goes well. Cleanliness should begin with the building and its environs. There should be absolutely no plumbing in the building, but it should be well ventilated and well lighted.

DR. WILLIAM WOTKYNs SEYMOUR, of Troy.—It is forty-five years since my father began his obstetrical training in this city under the tutelage of Dr. Hodge. I think the system then followed in that school would be a good thing now for the medical schools of the United States to follow. At that time it was the custom of Dr. Warrington to instruct his students in the management of midwifery from the first—even how to construct a suitable bed and to avoid all the nasty contrivances found in alleys and tenements. They were familiarized with the pelvis, the sutures, the positions of the head, the degrees of flexion and rotation, and all this with the pelvis concealed from view. In this wise the student early learned—on the dry bones, to be sure—to determine by the relation of the head to the pelvic bones what the position and presentation was. I think all practitioners will agree that, apart from cleanliness, this is a fundamental necessity in the practice of midwifery. I thoroughly approve of all that was said by the previous gentlemen. A word has been said about carrying examinations too far, but, to make them, a student must be essentially surgically clean.

DR. PRICE.—I spoke clearly about instructing students in regard to examining patients freely, provided they use soap and brush thoroughly first. In regard to familiarizing the student with the presentation, I instruct him, after delivery, when the child is in the hands of the nurse, to make an examination of the sutures and fontanelles, which will give him a knowledge that will quickly instruct him in regard to diagnosticating position.

It is curious how you can demonstrate the folly of chemical solutions in a clean class of patients. Here in city life, where we suffer all sorts of vices, it is not so. I value in city life the use of chemical solutions more to save eyes than to save women. Out of six hundred deliveries I have only had three

cases of ophthalmia, and these were where the mothers had not been prepared for accouchement.

DR. ROHÉ (closing the discussion).—I would like to add a few words to what I said in my paper. In the first place, speaking of frequent examinations, a class of ten students is summoned to every case attended in the Maryland Maternité; by the time they have examined the patient twice and the professor has examined her twice there are twenty-two examinations, which I think entirely sufficient in one case. With reference to the use of antiseptic injections, they are only given *after* labor when the condition of the patient calls for them. In regard to using them *before* labor, all the febrile cases that have occurred in the Maryland Maternité have been such as have been brought into the institution in labor, or where there was no opportunity of giving the ante-partum douche; no grave cases, but cases which indicated that, unless carefully managed, they might produce serious trouble. Those few cases have led me to believe that the douche before labor is of some use to the woman, and I believe, with Dr. Price, it is valuable for the safety of the eyes of the offspring.

DR. JOSEPH HOFFMAN, of Philadelphia, read the next paper, entitled

THE AXIS-TRACTION FORCEPS: ITS PLACE IN OBSTETRICS.

Assuming, without argument, that the forceps is the most important of all obstetrical instruments, and that its use devolves most frequently of all upon the general practitioner, whose success or failure for the most part depends on his early instruction, his experience, or, in some cases, his strength—force without art—the paramount importance of a thoroughly general appreciation of the value of the axis-traction principle in forceps application is imperative. It becomes the duty of every special society to encourage the widest possible discussion and exposition of its philosophy, while it is incumbent upon all teachers of obstetrics to insist upon it as the foundation of all instrumental procedure which has for its aim the successful delivery of the mother, without damage either to her own or the body of her child. By this standard alone is the use of the forceps to be judged. Students of our various schools are too apt to go out from them pinning their faith upon the instrument that the traditions of their own special institution have sanctified. Each, according to his instruction, will expect to subdue the world of obstetrics with a Hodge or a Wallace, a Simpson or a Davis. The fact stands out that in this, as in too many other questions, we have been taught to deal with names instead of principles. The point here to be insisted upon is that, added to the special

features of any instrument, of which the above may be taken as the type, the principle of axis traction completes it; without this the instrument is crude, the skill of the obstetrician being the only factor to modify and determine the degree of the imperfection.

The problem to be solved in every forceps delivery is complex, involving the application of a force along the curved axis of the pelvis, and the resolution of that force, so that as little as possible may be wasted, and none of it be harmfully expended upon either the tissues of the mother or the body of the child, necessitating at the same time, along with the force of traction, a lateral deviation in the line of the least resistance, and reducing concomitantly the direct pressure upon the fetal head to a degree alone sufficient to overcome the resistance along the axis of the pelvis, or any accidental or necessary increment thereto. It is plain that in the normal pelvis, with a normal presentation of the fetal head, the resistance to the progress of the head along the pelvic axis is afforded by the opposing soft structures below and the bony walls of the pelvis above. Both these are overcome by the expulsive power of the uterus. Artificial aid, intended to replace or supplement failing or absent uterine contractions, in order to be entirely effective at the superior strait, must act at right angles to it.

Now, when it is considered that, in addition to the antero-posterior curvature of the pelvic axis, there must also be a lateral variation through which the head rotates as it passes downward upon the perineum, it becomes evident that simple downward traction, even though effectively made along the real curved axis of the pelvis, must be made partially inefficient, in that it prevents the natural lateral movements of rotation above referred to. It is evident, however, that such movement is simply tentative or experimental, and that it cannot in any way approach the natural lateral curve in which the head tends toward the perineum. This movement is now, by common consent, relegated to the past and classed among the barbarities of obstetrics, and has no more place in scientific midwifery than the crowbar or wedge.

If now a lateral rotation is necessary to the normal downward progress of the head, and it cannot be obtained by the Hodge, Oslander, or Naegele methods of producing downward traction by a strap over the lock of the forceps, it becomes necessary to resort to other means, where artificial delivery is required. To move a body uniformly along a canal of this description requires, first, that the force should be applied primarily in the axis of the long diameter; second, that the traction shall at the same time be downward and backward; and, third, that it shall finally raise or lift the body

off of the floor of the perineum in order to avoid the damage of a direct pull upon its structures. In order to accomplish this apparently impossible result by one constant force, not only the canal is to be considered in relation with the force, but also the body to be moved through it. It is evident that the most favorable position at which to apply the force must be as near the centre as possible, for the nearer the centre it is acted upon the more nearly equal will be the radii of curvature as it rotates. [Dr. Hoffman then exhibited and demonstrated the most important forms of the axis-traction forceps.]

One of the simplest, and the one which to my mind most perfectly fulfils all of the conditions required in axis traction, is that devised by Poulet, of Lyons. Strange to say, the instrument has but lately found place in the literature of ob-

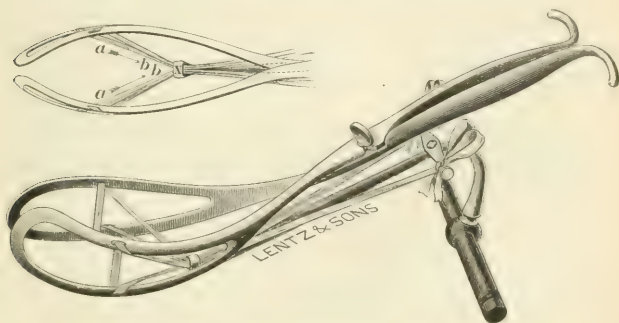


FIG. 1.—Poulet's Axis traction Forceps.

stetrics. It will at once be seen that the principle upon which it is constructed is identical with that of Tarnier's. The means for accomplishing the axis-traction effect are markedly different. The traction device of the Tarnier instrument is metallic, while that of Poulet is a combination of tapes with a swivel and metallic rod bent at an obtuse angle of a little more than ninety degrees.

In the Tarnier the traction is applied at the heel of the blade; in the Poulet the ribbons pass through perforations in the centre of the blade on either side of the fenestrum, while, before they are attached to the swivel on the traction rod, these tapes are made to pass through an eye at the extremity of the rod, thus bringing the traction force directly in the centre of the vaginal canal and immediately in relation with the fetal head. Furthermore, in the Tarnier instrument the for-

ceps is kept in relation with the fetal head by a compression screw, while in the Poullet instrument the simple traction effort, being expended centrally, and therefore falling inside of

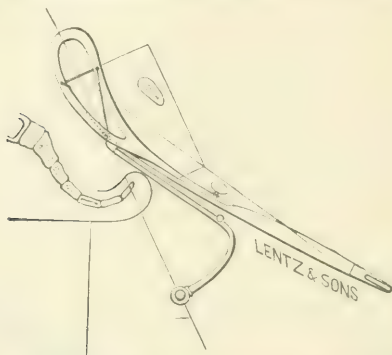


FIG. 2.—Showing Line of Traction in Antero-posterior Position of Head.

the blade, adjusts the forceps to the fetal head with a force entirely dependent upon the traction necessary to move it

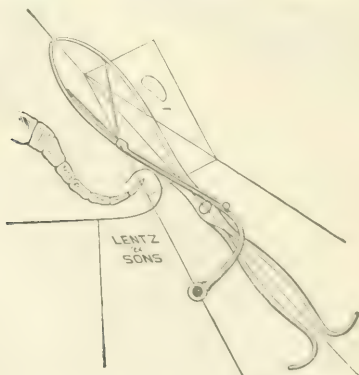


FIG. 3.—Showing Line of Traction when Head is Transverse.

along the pelvic canal. In all these particulars it must be confessed that it more nearly approaches the ideal axis traction than any other instrument. The pliability of the tapes

at the same time permits the utmost freedom of revolution, and offers not the least resistance to the lateral rotation above referred to. The handles of the instrument afford an exact index of the direction in which the head is laterally inclined to move.

At this point the peculiar advantages afforded by the axis-traction principle were summarized :

1. It permits the application of the forceps at the superior strait, without reference to the position of the fetal head, inasmuch as, owing to the freedom of lateral movement and of rotation, the head is brought into the canal and permitted to take the position most favorable for rotation.

2. In cases where the head is obstructed at the inferior strait, and where the perineum is most likely to suffer, the axis-traction principle, by lifting the head off the perineum and under the pubic arch, will save lacerations that are ordinarily promoted by the use of the short or the ordinary long forceps.

3. In contracted pelves, the more exact regulation, both of pressure and traction effort, must save many children and mothers.

4. In breech presentations, especially with the Poulet instrument, in which the pressure upon the child is measured entirely by the resistance to axial movement, the application of the forceps may be safely attempted without fear of crushing the pelvis.

5. At all positions along the pelvic canal where forceps are demanded, the axis-traction instrument affords the safest and most scientific aid to delivery.

Dr. Hoffman, in conclusion, called attention to the fact that the axis-traction principle is easily applied to all forceps.

Discussion.

DR. WILLIAM WOTKYNs SEYMOUR, Troy.—At a previous meeting I read the teaching of my father in regard to the necessity of recognizing three planes in the pelvis instead of two. I think the recognition of those planes the actual scientific basis on which the axis-traction forceps depends. [Dr. Seymour then explained by diagrams what he meant, and referred to vol. ii., Transactions of the American Association of Obstetricians and Gynecologists, where these illustrations will be found.]

DR. JOSEPH PRICE, of Philadelphia.—This is a subject I have been very considerably interested in for some years. If Mr. Tait had taught some years ago what he teaches now, it would entitle him to more consideration. We are not now ready to make supravaginal amputation, unless there is some specific reason for it. We might apply to him what he said

of Dr. Barnes, "His suggestion is simply ghastly." I value the Tarnier or axis-traction principle greatly. The primary Tarnier principle has never been improved upon very much. You cannot lift with any other forceps an impacted head with the same ease and readiness. The Tarnier forceps is, however, a clumsy instrument, and, like nearly all the French instruments, it is a compressor. Again, the angulation is bad; it is not that of the American or English forceps. But the traction principle is of paramount importance. The Simpson forceps with the Tarnier principle is, in my opinion, the best in use. It is simple and easy of application, and is not a compressor. The Simpson forceps makes the least compression of all forceps. I repeat, I consider the axis-traction a life-saving principle, and have myself saved many children that would have been lost with the old forceps.

DR. HOFFMAN (closing the discussion).—The principle I have tried to enunciate is that there is no forceps on the table besides the one I recommend that is not faulty. With this a young man can do more than an experienced accoucheur with the old style; not to say that the young man's judgment will be as good as the old man's, or his knowledge of the subject of obstetrics as vast, but, acting upon the mechanical principle applied by this forceps, he must do more effective work than any man who refuses to use it. I never saw an axis-traction forceps until I got out of medical school. I called attention to the Bethel forceps, described in the *American Journal of Medical Sciences* in 1853. You will see that in the hands of an ordinary obstetrician that instrument could not help but be murderous! I have in my pocket a note from a gentleman whom I induced to purchase the axis-traction forceps. He lately delivered a woman upon whom two years ago he pulled for ninety minutes with the Wallace forceps, and in exactly a similar position he delivered her this time in fifteen, without any effort and without exhausting himself or his patient. Dr. Price refers to the traction power of the Simpson forceps. There is no doubt in the world that it is an excellent instrument, but to say it has less compression power than any other forceps is, I think, wrong. I demonstrated that this forceps has only the compression that you use to perform traction. The Simpson may have as little compression, but no forceps could have less compression power than this.

DR. WILLIAM WOTKYNS SEYMOUR, of Troy, then read a paper on

THE VECTIS: A USEFUL BUT FORGOTTEN INSTRUMENT.

In the paper the claim is made that the vectis, notwithstanding the disregard into which it has fallen among the Ameri-

cans, English, and Germans, is an instrument of very great value. This disregard of the instrument the writer thinks is due, first, to the employment of the vectis as a lever of the first class—in which manner it ought never to have been used—and, secondly, to the extravagant claim of its advocates that it was equal if not superior to the forceps in all respects; when the fact really is that the vectis requires for its proper use a good knowledge of the niceties of obstetric mechanism and diagnosis, and even then should be employed to correct presentations, increase flexion and rotation preparatory to the application of forceps or to leaving to nature the completion of labor with the abnormalities corrected. As Hodge claimed, the vectis and forceps are not rival but co-ordinate instruments. Inasmuch as the writer claims the vectis should never be used as a lever but as a tractor, he recommends a vectis having a cephalic curve of an upper quadrant of a four-inch circle, so as to be well applied to the occipital extremity of the head.

The single forceps blade can never be used save as a lever of the first class, from its lack of curvature, and hence can only be used wrongly. In this we may perhaps find the reason for the slight esteem in which is held an instrument frequently and successfully employed by Hodge, the great master of the mechanism, and by the obstetricians of Italy, France, and the Low Countries to-day. It is especially recommended to increase flexion and rotation before the application of the forceps, and, after the teachings of Hodge, as almost uniformly successful in converting O. P. into O. A. positions. In face presentations it may also greatly shorten labor, with increased safety to mother and child; and in contracted pelves, sometimes, by so increasing flexion as to bring the most favorable diameters of head and pelvis into relation, brings the head into the cavity of the pelvis, where the forceps could not be successfully applied.

SECOND DAY—MORNING SESSION.

Dr. J. H. BRANHAM, of Baltimore, read the first paper, entitled

SHORTENING THE ROUND LIGAMENTS OF THE UTERUS (ALEXANDER'S OPERATION).

He gave a brief historical sketch of the operation, and then proceeded to relate the results of his own experience, gained through over fifty operations and dissections on the cadaver, as well as through several performed on the living for displacements of the uterus.

He concluded as follows: From the foregoing observations I think the following deductions may be safely drawn:

1. That the round ligaments are very rarely absent.
2. That when they are pulled well down into the canal they draw the uterus upward and forward into nearly its normal position, thus correcting various displacements when these are not accompanied by adhesions.
3. That, in order to accomplish these results, their attachments to the walls of the inguinal canal and to the infundibuliform fascia must be broken up, making possible the free entrance of air or fluids into the subperitoneal cellular tissue, which necessitates the most careful asepsis in these operations.
4. That, although the ligaments partake in the atrophy of the genital organs after the menopause, anything that prevents this change in the uterus will also prevent it in the round ligaments.

Below are the brief histories of two operations done during the present year. They are too recent for their results to be considered permanent; but as the second was for trouble which this operation is not usually considered to relieve, and as so far they have been satisfactory, I will give short notes of them.

Mrs. M., white, age 67, was admitted to the City Hospital of Baltimore January 4th, 1890. She had suffered for several years from uterine prolapsus, which at times was complete. She also had a severe cough; for this she was put on treatment. On January 25th, her cough being much improved, she was put under chloroform; the usual incisions being made, the ligaments were drawn out until the uterus was drawn high up against the abdominal wall. To do this it was necessary to draw out about six inches. Some trouble was experienced in finding the right ligament, which was pulled underneath the lower pillar of the external abdominal ring.

They were then sutured closely to the pillars and also to the dense fascia over the pubes with aseptic silk. The inguinal canal was also narrowed by deep sutures to prevent hernia. The vagina was packed to hold the uterus in position until union was secured.

The patient was kept in bed for two weeks. Slight suppuration occurred on the right side.

She was under observation for six weeks, and the uterus was firmly fixed in position when she was last examined.

Mary W., colored, age 29. Last confinement two years ago; lasted five days, since which she has suffered from the usual symptoms of uterine displacement with cystocele. On examination, uterus low down in pelvis, freely movable, enlarged and tender. Vaginal walls thick and flabby, with

anterior and posterior prolapse of same. Great difficulty in urinating. Urine thick and ammoniacal. Operation July 13th, same as in previous case. Slight suppuration beginning on tenth day on both sides; otherwise recovery uneventful.

Examined September 13th, standing. Uterus firmly fixed and high up. Vaginal walls stretched so that there is very slight cystocele.

Symptoms have steadily improved. The good effects in this case are due largely to the relief of congestion which Emmet has shown to accompany uterine displacements, and which he attributes to the tortuous condition of veins resulting therefrom.

Discussion.

DR. ROBERT T. MORRIS, of New York.—I do not think at the present time the subject should call for a discussion. I think we simply need to have collections of data bearing upon the benefit of the operation. I rise to give a practical point. As frequently the operator has trouble in finding the round ligament, if he takes a good big hook, and, after having made the incision, passes the hook forward under everything except the muscle down to the abdominal wall near the external inguinal ring, he will then have the round ligament in the hook.

DR. JOSEPH HOFFMAN, of Philadelphia.—There is one point in relation to all these operations which tends to fix the uterus in a given position; that is, the nature of the surroundings relative to the variable size and conditions of the uterus during pregnancy. Owing to this fact the operation must always remain in question as to utility during the child-bearing period. The size of the uterus, owing to the mechanical position in which it is placed with reference to the round ligament—whose existence is often only in the text books—places the uterus in a very unfavorable position so far as tying it up is concerned, since, as we know, the uterus swings down between two ligaments that are constantly on the stretch; so, if it does work temporarily, it is bound after a while to lengthen the cords again. I think in the same light come all the operations which try to stitch up the uterus against the anterior abdominal wall. I have had two after-experiences with women in whom this operation was done. In one I found no traces whatever of the stitches which were intended to fasten the uterus against the anterior abdominal wall. In the other case the woman finally became pregnant. This shows certainly that those stitches must have given way. Pregnancy could not have occurred with the uterus stitched to the pubes. Again, the question comes up whether the consequent condi-

tion will not bring on a condition of bladder irritability, which is as bad as the irritability consequent upon version.

DR. MORDECAI PRICE, of Philadelphia.—Is there any proof whatever that the round ligaments were ever intended by nature to hold the uterus in position? I have been in the abdomen a great many times, and found them curled up like coils of rope. After you have shortened them, how long will they stay short? I say less time than the anxiety of the doctor will remain over the operation. I believe the operation will fall into absolute disuse and death.

One other point: The author's case, 65 years old, is one for Emmet's crutch operation. I have done this where the operation put the whole viscera back into the pelvis with absolute comfort. From what I have seen of the Alexander operation, it never had a single indication of utility.

DR. J. M. BALDY, of Philadelphia.—The majority of the gentlemen who make the Alexander operation contend that it should be done only on cases in which the uterus is perfectly free, *i.e.*, where there are no adhesions whatever. There comes the hitch. It is generally impossible to tell when the uterus is free. Those of us who have been in the abdomen many times know that is a difficult question to deal with. To determine its benefits we will have to await general results for a good many years, and the conclusion must be based on a large number of operations. I think in the two cases I have seen the final results will not be good.

DR. E. E. MONTGOMERY, of Philadelphia.—As has been well said, this operation is necessarily of limited application. It can only be performed on those patients in whom the uterus is freely movable, in whom we are able to demonstrate the absence of adhesions between the uterus and retro-uterine tissues; consequently the class of cases who suffer most from retro-displacements are not amenable to this particular form or method of procedure. It is necessary in these cases to resort to intra-abdominal methods. Two cases of this character I have operated upon by opening the abdomen, separating the adhesions between the uterus and retro-uterine tissues, passing through the fundus of the uterus a catgut suture, taking up the round ligament, setting it free from its capsule and drawing it in on either side, stripping a portion of the peritoneum from the uterus; those freshened surfaces are sutured together in front of the uterus. By this method we shorten the ligaments within the abdominal cavity. We shorten not only the round ligaments but the broad ligaments, and, as the last step of the operation, the suture passing through the fundus is passed through the abdominal walls as well to the lower opening in the abdominal wound. We have here, by means of the freshened surface, considerable opportunity for gluing

the uterus to the anterior parietes. To keep the uterus in this position until the adhesions have become firm, it is necessary to introduce a pessary. This method of procedure seems to me preferable to the drawing out of the round ligaments through the inguinal canal. In many cases, indeed, we find the round ligaments very much atrophied and attenuated, so that they are of little practical use. As to the results of the operation, we can only await the opportunity to investigate cases operated on a number of years thereafter. This will demonstrate certainly whether the procedure is one of value.

DR. BRANHAM (closing the discussion).—Several points have been brought up in the discussion which I wish to notice. I do not think there is any comparison between the operation of shortening the round ligaments by drawing them out of the inguinal canal and the operation by abdominal section. I am perfectly sure in a large number of these cases operated on I have always been able to draw the uterus into position. I believe in 99 cases out of 100 the uterus can be drawn into position and held there by the round ligaments without making abdominal section. If this is done the operation is much less dangerous than those done inside of the abdomen. The only operation I think might be a supplement is Wylie's operation, in which he scrapes the tissue of the uterus and shortens the ligament inside the abdomen; but it is only justified, as Wylie says, in the cases where you have to make abdominal section for some other cause. As to pregnancy in these cases, Dr. Alexander had three that had been pregnant afterward. Two had been delivered without any return of the displacement; another had gone on for some months without trouble. The difference between this and the operation for ventral fixation is, you have a normal uterine support. There is no question, I suppose, except in the mind of the gentleman who spoke second, that this ligament is to support the uterus. After the ligament has been shortened it would still undergo the normal hypertrophy in pregnancy, and the same contraction as in normal conditions after pregnancy. The operation for ordinary ventral fixation has been abandoned, I believe, almost entirely, except in Germany. One gentleman surprised me by saying that those who had done Alexander's operation were those who questioned it. Of all those who have done the operation a number of times, I have not seen a single one who does not speak well of it. Wylie and Polk, I believe, consider it a good operation. I think the gentleman is entirely mistaken.

The next paper was read by DR. A. VANDER VEER, of Albany, entitled

SOME OF THE DIFFICULTIES MET WITH IN ABDOMINAL SURGERY,
AS ILLUSTRATED BY CASES TAKEN FROM PERSONAL RECORDS.

This paper was offered with the hope that, *inter alia*, it might present to the public the necessity for the early calling-in of the surgeon in cases of abdominal obstruction, even if necessary to do nothing more than confirm the diagnosis.

CASE I.—Miss S. M., æt. 24, domestic, admitted to Albany Hospital September 17th, 1888. Tumor began eighteen months previous, and for last six months grew rapidly, gave her much pain, and she lost in flesh sufficiently to alarm her friends. Diagnosis of fibro-sarcoma of left broad ligament. Exploration by abdominal section advised with a view to removal of growth, if possible. Operation performed September 27th, 1888. Tumor filled pelvis and abdomen up to umbilicus, and connected entirely with left broad ligament; many deep adhesions within pelvis and about sigmoid flexure. Ligatures applied to points of adhesion, and pedicle, made from broad ligaments and adhesions, secured by Staffordshire knot. Patient rallied well from operation, and did well until beginning of third day, when nausea began, followed in twelve hours by vomiting. Rectal injections, small doses calomel and sulph. mag., failed to produce movement of bowels and but little gas. Vomiting became fecal a few hours before death, and she died October 2d.

Autopsy revealed that a coil of the ileum had become attached to sigmoid flexure where adhesions had been separated, and had doubled upon itself, causing obstruction of bowels and death.

This was in October, 1888: now, in September, 1890, in all such cases, especially where we have reason to believe the growth is of the nature of sarcoma or true carcinoma with adhesions, is it not better to flush the cavity and leave it filled with the fluid, so that the intestines may continue to float for some time after? I do so now, but use the drainage for one, two, or three days, with good results.

CASE II.—Mrs. H. M., æt. 31, married, mother of three children, oldest 6 years old, all living and healthy. Family history good. Her menstruation began at 14, and has always been regular up to seven months ago, when it ceased entirely. Had an attack of dyspepsia when 19, was very ill for two months, and has since been troubled with same attacks from two to three months each year. Since birth of last child, July, 1887, has had more or less nausea with vomiting, pain throughout abdomen, and gradually lost in flesh. Latter part of July, 1888, noticed enlargement in abdomen to the right and above umbilicus. Family physician called in several consulting physicians, and the consensus of opinion was that

she had carcinoma of pylorus. When admitted to hospital, November 20th, 1888, careful examination revealed a hard mass above the ileo-cecal region. She is very much constipated at times, but feels better when bowels can be made to move. Vomited first food or drink recently taken, then greenish-looking fluid, at times fecal. Exploratory section advised, with removal of growth if possible, and intestinal anastomosis if necessary. Operation, November 23d, 1888, revealed projecting tumor at junction of transverse and ascending colon, from which extended adhesions around the gut, closing its calibre entirely. Believing tumor to be malignant, I concluded to make operation as short as possible, made no examination further than pyloric end of stomach, and closed wound. Patient, though weak, bore operation well, returning to fairly good condition within twelve hours. Wound healed perfectly. Patient had a number of good movements of bowels; vomited occasionally, but no fecal fluid. After tenth day took more food than for a year previous, but still complained of stomach being distended with gas. She returned home December 19th much improved, but I stated to her husband she had malignant growth, not safe to remove, and that her unpleasant symptoms were probably due to secondary deposits in walls of stomach. The attacks of vomiting became more serious, and she died of exhaustion.

Autopsy revealed an hour-glass contraction of stomach nearer cardiac end, by bands of adhesions only allowing a probe to pass through the stricture. Supposed malignant tumor proved to be projecting kidney firmly adherent in new position, yet normal. I am of the impression that at one time this was a floating kidney, at times producing attacks of acute gastritis, occasionally accompanied with local peritonitis; that in one of these latter attacks the kidney became fastened by the new adhesions.

Would we have been justified in doing intestinal anastomosis of the lower end of the duodenum or upper portion of the jejunum with the cardiac end of stomach, in the face of supposed malignant tumor and feeble condition of patient?

CASE III.—Mrs. L. R., married, no children; family history that of tuberculosis. Has some cough and marked dullness over apex of left lung. One year before admission to Albany Hospital, November 10th, 1888, she noticed enlargement on left side of abdomen, which increased and presented well-marked ovarian cyst. Operation done November 12th, 1888. No complications whatever. Pedicle short and ligated with Chinese soft silk, having removed wax to make silk soft, pliable, and easily handled. Patient did well until end of third day, when symptoms of septic peritonitis presented, and she died November 15th.

Autopsy showed ligature completely softened, loosened, and very friable; some hemorrhage from pedicle, but whole peritoneal cavity filled with pockets of pus, presenting one of the worst conditions possible. Possibly general constitutional condition of patient was the means of developing peritoneal complication, but undoubtedly imperfect ligature acted as exciting cause. No doubt benefit would have been derived by opening up on third day, washing out thoroughly, and putting in drainage tube.

CASE IV.—Mrs. G. T., æt. 51, married, has had one child and several miscarriages. Noticed enlargement of abdomen, perhaps five years ago, but more marked for past two years. Menstruation usually regular, severe at times, but for past year only every two or three months. Has had several attacks of local peritonitis; obliged to take freely of morphine, and has well established the morphine habit. I confirmed family physician's diagnosis of ovarian tumor, but felt somewhat uncertain as to its being complicated with a fibroid of the uterus. The tumor was plainly multilocular and well defined. She had always fought against operative procedure, yet it was evident the operation was her only hope. We prepared a room in her own house, she having all the comforts this world could bring, and secured two of my best trained nurses. Public opinion, her friends, pronounced against the operation, but when the hour came she was brave and gave me much courage. She hoped for the best, but had arranged everything for her death.

Operation performed August 28th, assisted by Dr. L. and my usual assistants. Tumor was made up of more cysts than I have ever observed, and contents as varied as possible. There were adhesions to every organ within the abdominal cavity. These were loosened by sponge and finger, much time was consumed in applying ligatures, and a long and tedious operation resulted in the removal of a tumor weighing fifty-six pounds. Her average weight in early life was ninety pounds. Abdomen was thoroughly flushed and left full of hot water. Glass drainage tube was left in lower end of incision. The hemorrhage for three days was quite decided, at times so serious as to give me much alarm, and I suggested to my assistant, Dr. Macdonald, who remained with patient at night, to inject a solution of subsulphate of iron through the tube; but hemorrhage suddenly ceased, oozing grew less and less, and tube removed on ninth day. She made an excellent recovery, but what anxiety could have been spared myself, as the operator, had she submitted to an early operation!

CASE V.—Mr. S. W., married, laborer, habits and family record good. I could not respond on receipt of telegram to come in country to see this case of abdominal obstruction, but

my assistant, Dr. Macdonald, went, returning next morning with patient to Albany Hospital. When 17, patient developed left inguinal hernia, but it never giving much trouble he grew careless, often left off truss, and failed to keep hernia up. While in this condition, while threshing buckwheat, the bowel came down quite free, but he lay down in usual position and thought he replaced it all right. Was taken with vomiting after a hearty dinner, which continued for two days. No severe pain until third day. When I saw him at hospital he presented every symptom of approaching end. It is in this condition we are too often called to see cases of abdominal surgery. I concluded on examination that the only thing I could do would be an enterostomy. I made median section, giving little ether, passed in two fingers on either side, did not detect any trouble about either of the rings, brought out what I believed to be a fold of the ileum, incised it, emptied out a great quantity of gas and fecal liquid, attached intestine to walls of abdomen, placed patient in bed with artificial heat around him, and gave hot stimulants per rectum and hypodermatically. Operation not more than eighteen minutes. It was a grave question, however, whether he would rally at all, but in a few hours he became more conscious, expressed himself greatly relieved, and warmth returned with all other evidences of good reaction. No movement could be obtained of lower bowel. On October 28th an attempt was made to force water per rectum up through fistula, but it was unsuccessful. Senn's apparatus for the use of hydrogen gas was made use of, but only large intestines could be distended. I determined to do more thorough laparotomy, find point of obstruction, its nature, etc., and, if thought best, do intestinal anastomosis. I found strong adhesions implicating ileo-cecal region, also portion of ileum, and so firm that I thought it unwise to disturb them. As portion of small intestine, opened previously to form fistula, was very near lower end of ileum, I thought best to take a loop nearest and just above the fistula, attach it to beginning of ascending colon by means of Senn's bone plates and Lembert's sutures. Portion of ileum below fistula, together with cecum, was entirely collapsed, and with adhesions, the appendix, etc., formed a dense mass. All this was side-tracked by the anastomosis. Wound closed and dressed in usual manner. Patient rallied well, third day passed gas per rectum and slight amount of fecal matter. He continued doing well, but worried incessantly about getting home, supporting his family, etc. On November 4th he began to show signs of restlessness, gradually grew worse, passed into a condition of collapse, and died December 5th.

Autopsy revealed a small amount of pus at most dependent portion of last wound for closing fistula; no general peritoni-

tis, but evidence of old disease. Extensive adhesion of intestines among themselves and to abdominal wall on right side. Portion of intestine, seat of anastomosis, removed. Union found to be perfect. Opening between intestines admitted end of little finger. Bone plates entirely absorbed. No evidence of old heart trouble. All organs apparently healthy. Had I attempted longer operation when first brought to the hospital, I am convinced he would have died on the table. Adhesions will form and present when we least expect them. Consider, however, that in this case the adhesions were on opposite side of point of exit of hernia.

CASE VI.—Mrs. G. H., *et.* 30, married, mother of five children. Began to menstruate when $12\frac{1}{2}$ years old, and was regular until her first pregnancy, which occurred two months after marriage, or when 19 years old. She had then four children in rapid succession, the first child weighing nearly twelve pounds. I had treated her family before her marriage, and she now came to me for treatment for uterine trouble. Her condition was deplorable—laceration of perineum, cervix lacerated, uterine appendages much thickened and sensitive, uterus much enlarged, completely retroverted, and cervix swollen and tender, with evidence of pelvic peritonitis.

Under local treatment of hot water, scarification of cervix, etc., she began to improve, but two of her children died and she became very much depressed. Treatment was renewed later on and a careful effort made to have her wear a suitable pessary, but with little success, this instrument doing more or less harm. She began at this time to have severe hemorrhages, menstruation beginning gradually, then coming on in gushes and exhausting her. No evidence of tumor. I curetted uterus thoroughly, bringing away quite an amount of granular detritus, which was followed by decided improvement. One year later I found the pelvis sufficiently cleared to operate on laceration of cervix. Previous to operation she had acquired the morphine habit, and about three months after operation began to show symptoms of having a tape-worm. This caused her much depression of spirits, but medicine reached the tenia and finally brought it all away. She soon after became pregnant, followed by great depression of mind and a secret return to morphine habit. She had the best of care, did well in getting up from her confinement, but her strange actions disturbed her husband and physician. After considering the advisability of placing her in some private retreat, it was thought best to bring her to the Albany Hospital, where, under the care of two good trained nurses, we did succeed in stopping the anodynes. She was now very irregular in her menstruation, suffering, it was believed, much. On examination I found the tubes thickened, ovaries sensitive, and

uterus markedly retroverted. After careful consultation, and with the full and hearty indorsement of her husband, it was thought best to make an abdominal exploration, find true condition of appendages, if necessary remove them, bring the uterus up in position and attach it to abdominal walls. Patient being in best mental condition observed for several months, and much improved physically, I operated October 30th, 1889. The tubes were found in a condition of pyosalpinx, one ovary cirrhused, the other much enlarged and in a condition of cystic degeneration. All, with the appendages, were included in the Staffordshire knot and removed in ordinary way. I did not encounter trouble in bringing uterus up in position and attaching it to under-surface of abdominal wall in front, but this was my fatal step in the operation, as subsequently shown. In closing the wound no drainage tube was introduced. I left her at 12 M. fully recovered from the operation and expressing herself as feeling very comfortable. At 1 P.M., returning from my lecture, I found her sleeping and, as she remarked, very comfortable, but she looked pale and her pulse was rapid and weak. I suspected hemorrhage, and opened up the lower end of wound, when a flow of blood presented that told but too well what was going on. I immediately opened the incision and found that the ligatures had failed to hold the large veins, from which a serious hemorrhage had occurred, filling the pelvis and extending up into the abdomen. After much effort we secured the bleeding vessels, but our patient was about moribund. All our efforts to restore her were in vain, and at 3 P.M. she was dead.

In this case I think we undertook too much; at least I ought to have secured the plexus of veins in section when lifting the uterus in position and fastening it there.

CASE VIII.—Mrs. M. E. N., æt. 45, widow, admitted to hospital May 6th, 1889. Family history good; patient well, up to 20 years of age. Was then treated for "womb trouble"—nature not known—and has taken more or less medicine. Menstruated at 13, at times painful, and quantity irregular. Married at 22; no children, no miscarriages. About eight years ago, after having had vague, indefinite symptoms for some months, noticed a hard, round tumor low down in abdomen. When first seen was size of a cocoanut; has increased, and now fills abdomen, spreading out in all directions. Came to hospital and was anxious to have tumor removed. When told that it implicated the whole uterus, and that, if an operation was done at all, all would have to be removed, she replied: "I cannot live long as I am. I will take all the risk; you do the operation." June 23d, 1890, I did supravaginal hysterectomy, being obliged to make an incision from the ensiform cartilage to the symphysis pubis, and found no ad-

hesions. Using the corkscrew, I lifted the tumor directly out of abdomen, but was distressed to observe the same, if not more marked, enlarged veins as in the previous case. I placed Tait's rope écraseur around neck of tumor, isolated and tied the veins in sections, and removed the tubes and ovaries separately, then removed the uterus with the tumor. Pedicle formed was about half the size of my wrist. I first endeavored to control hemorrhage with Staffordshire knot, but this was not sufficient. I then tied the vessels separately, as they appeared in the stump, tying the stump in sections by the lock stitch. I then brought together the peritoneum over the stump and along broad ligament, shutting it out from the peritoneal cavity, silk alone being used as ligature and suture. Aside from an abscess forming and emptying into vagina, the patient made an uninterrupted recovery.

Discussion.

DR. E. E. MONTGOMERY, of Philadelphia.—We are greatly indebted to Dr. Vander Veer for reporting a number of cases presenting great difficulties. I do not think there is any surgeon who practises abdominal surgery who has not met cases that have been of great experience to him in subsequent operations—cases which have tried him, and in which, possibly, he has been found wanting. As he reviews the case he feels that had he had an opportunity to study such a case he might have done differently.

DR. CHAS. A. L. REED, of Cincinnati.—I want to express my gratitude to Dr. Vander Veer for presenting these very illustrative cases. I want to congratulate him and the society which will permit a Fellow to come into its presence and report so many cases with unfavorable issue. I must say, however, that in thus making this report Dr. Vander Veer could feel a certain degree of safety, for in the matter of technique, in that of judgment, or everything pertaining to the management of the cases, he has displayed that wisdom and scientific acumen which has characterized his work and established his national reputation. I make this remark so that any criticism I may make may not be misconstrued. The first thing that impressed me in the first case upon his list was the fact that, finding any oozing, he failed to employ the drainage tube. The same was true in the third case, and I believe in the fifth, as I understood it. I take this as perhaps the most instructive feature of the doctor's paper—failure to employ drainage, and the failure to employ it in cases that *apparently* did not need it. It has come to be the practice of my colleague, Dr. Hall, and myself, at the hospital in which we are interested, to employ drainage in every case of abdominal section that

comes into our hands. While we occasionally encounter cases that at the time of closure would indicate that a drainage tube was not needed, still we are treated to the most extraordinary surprises, and in these very cases secure very large quantities of serum. Dr. Vander Veer's case of the multilocular cyst presented about every difficulty known to the operator. In this case drainage was employed, and the case made an ideal recovery. On the one hand we have two cases, comparatively simple cases, die, and, on the other, one of the most complicated recover. In the first instance we did not have drainage, and in the second we did have drainage.

DR. J. M. BALDY, of Philadelphia.—The question implied or asked by the doctor's paper, Can a surgeon do everything and anything in the abdominal pelvis? is not only of great interest to the laity, but to the profession at large. It is well known that we cannot do everything, and cannot do many things that seem on the face of them very simple. The case of intestinal obstruction under discussion illustrates the propriety of doing nothing except relieving present symptoms, and afterwards any number of operations necessary to cure the disease can be done. The subsequent operation done in that case, intestinal anastomosis, is one which is going to be of very serious importance. The result in that case was shown at the autopsy—an opening in which only the tip of the little finger could be introduced. I believe that is going to be the usual result. I do not believe the results in these cases are going to be permanent. The opening, in the first place, is too small to begin with. That opening, small as it is in the beginning, is going to contract. Those patients are going to die of intestinal obstruction.

DR. JOSEPH HOFFMAN, of Philadelphia.—I would say, after a great deal of careful study and observation of the technique of hysterectomy, I cannot see how we are going to get along without the clamp. There are certain cases in which intra-peritoneal treatment by suture is perfectly possible, owing to the fact that the uterus itself in the neighborhood of the supravaginal portion has not undergone degeneration; but structures that are so hard that the knife can hardly cut them will shrink, and the suture will not control hemorrhage. In some cases it often has to be tightened every ten or fifteen minutes. If the clamp itself must be tightened at such intervals, it shows that threads cannot hold it and control hemorrhage. If purgation is going to do any good, it must act, as the drainage tube does, by keeping up the dry peritoneal surface. Moisture attracts moisture. If we want to get the good of purgation and expect salines to do any good, they must be used at once and not wait until the cavity is full. They must be

used at once, and then the absorbing power of the peritoneum will not be overtaxed.

DR. RUFUS B. HALL, of Cincinnati.—I would like to ask some of the opponents to drainage if they have known of a drainage tube, that remained only six or ten hours, that has injured or killed a patient. I would like to compare that question with the other one: How many cases on record we could say died for the want of the drainage tube?

DR. W. E. B. DAVIS, of Birmingham.—I think it is a questionable procedure to make an artificial anus in any case, unless in a suppurative peritonitis with extreme tympanites. I believe it would have been better to have made an intestinal anastomosis in the beginning. In that way he would have surrounded the obstruction, and could have washed out the bowels before making the anastomosis. I think the future of intestinal anastomosis is uncertain as yet. Dr. Senn is a faithful, conscientious worker, but sufficient time has not elapsed as yet to make his histories reliable. I take it that all those who have operated on dogs will observe after months or weeks a certain amount of contraction, and reason will teach us that this will grow greater and that we will lose cases by this means. I have had two cases of intestinal obstruction in the human being, and have noticed this contraction. I think the opening in the Senn plate is rather too small, but the way it is perforated now I believe it is the best device. I have used the plate, the rubber ring, and in fact nearly all the devices, but most frequently the Davis mat and catgut plate. It is difficult to get the catgut plate, and it becomes soft after being subjected to the intestinal fluid a few hours. My observation has been this, that you will get good results so far as the immediate appearances are concerned.

DR. JAMES F. W. ROSS, of Toronto.—I must compliment Dr. Vander Veer on his case of intestinal obstruction. I think it is certainly a monument to surgery. My friend Dr. Reed has just said he believes drainage should be employed in every case. I am coming more and more to this conviction every day. I believe in all cases where the pedicle is dropped into the abdominal cavity, or where there are adhesions, a drainage tube should be used. I use both purgation and the drainage tube.

DR. JOSEPH PRICE, of Philadelphia.—You all know my position in regard to the drainage tube. In regard to the Staffordshire knot, the failure where it was used is sufficient to support my position in regard to this knot. It is responsible for more deaths than all other causes chargeable to technique combined. This has been the observation in Philadelphia for some six years.

In regard to the drainage tube, it will do no harm in the

hands of men who know how to take care of it. It must be kept strictly clean—must be cleaned often—rotated and elevated at least every six hours a quarter of an inch or so. It must be well placed, at the most dependent point, at the seat of a dirty enucleation.

Hysterectomy—we have been struggling over this operation a number of years, and it is only the intraperitoneal operators who occupy a doubtful position at present. In short, it is my impression now that the operators who are dropping their pedicles in hysterectomy will abandon it—Martin, Sanger, and the others. In the drop method you are at a loss to know what to do if mischief takes place. More than thirty per cent of the cases that are coming to me for supravaginal hysterectomy are cases that have been treated with electricity. We are proving not only the value of the extraperitoneal method, but the value of hysterectomy in the desperate cases, neglected cases, cases that have been barbarously treated. I feel that the procedure is an established one and is one of great value. A point more in regard to purgatives: A better preparation of the patient will give better results and less drainage. The more purgation before the operation the less after. It is more difficult to use purgation after an operation where there is disturbance from ether.

DR. VANDER VEER (closing the discussion).—I thank the gentlemen who have discussed the question for the very fair manner they have treated my paper. I have not one word of complaint. Perhaps it is somewhat of a risk to expose one's work, yet in the presence of candid men it is but right. I would say in regard to Dr. Reed's remarks—the case in which I supposed my patient had died from peritonitis—it was simply a case of obstruction, and there was no peritonitis present.

In regard to Dr. Baldy's views upon drainage, I coincide with him clearly in much that he said; not in all.

As regards the bone plates, this opening in the bowel admitted my index finger, not simply the little finger; the index finger could pass through readily; union is very perfect. I selected the largest bone plate of the Senn pattern, after having examined all the others. I feel that the bone plate is easiest to handle, one you can keep on hand; yet I was greatly disappointed to find the opening so small.

Dr. Hoffman, I am afraid, misunderstood me in regard to the use of the clamp. I would like to see the clamp done away with, but I do not know as we will ever live to see that time.

Dr. Hall and Dr. Reed express the views of many who are using drainage freely. We remember the paper of Dr. Hill, in which he used drainage in all his cases. We must look at

the facts as they present, and I believe all operators are tending more toward the use of drainage. One point not brought out in the discussion: Do we have hernia following the use of the drainage tube? Is it an element that tends to the production of hernia?

I cannot quite agree with Dr. Davis as to the primary operation. I am quite certain my patient would have died if I had gone on to find the point of obstruction.

Dr. Price's views upon hysterectomy are correct beyond a doubt; still, I think I heard him say that within a few days he had done the operation and not used the clamp.

SECOND DAY—AFTERNOON SESSION.

DR. W. W. POTTER, of Buffalo, reported

A CASE IN WHICH OVARIAN AND LIGAMENTOUS CYSTS CO-EXISTED IN THE SAME PATIENT; OPERATION; DEATH FROM SHOCK.

This case is presented for record by reason of the unusual shape and size of the abdomen, the dual nature of the cysts, and as illustrating the dangers of repeated tapping and delay in submitting to an operation for radical cure.

The patient was a married woman, age 26 years, in whom the growth was first discovered about five years ago, and who had been tapped several times before the operation, though not for three years past. She was operated upon July 9th, 1890, when a large ligamentous cyst was found on the right side, and a multiple cyst of the left ovary. She was in bad condition, very much emaciated, and took ether unkindly. Great difficulty was experienced in separating the right cyst from the abdominal walls, by reason of the fact that there was absolute fusion of the parietes and the cyst wall. The patient survived the operation only a few hours, succumbing to shock.

The illustration shows the enormous protrusion of the abdomen, which in shape was much as if a huge watermelon had implanted itself in the abdominal walls.

The case is of interest as showing the difficulties which arise in neglected cases, as well as of the dual nature of the growths.

Discussion.

DR. MORRIS, New York.—As a rule, I am opposed to tapping in ovarian cysts, but in cases in which we have so very large a cyst as this it seems to me we avoid the danger of shock if, one or two or three days before the operation for the removal of the cyst, we draw off a part of the fluid con-

tained in the cyst, the amount to be withdrawn to be determined by the judgment of the surgeon. All are familiar with the amount of shock that sometimes follows a simple tapping operation. If, then, we add to this shock by removing the walls of the tumor and disturb the large sympathetic plexuses of the abdomen, paralyze the sympathetics which control the circulation of the blood, thus causing the forma-



DR. POTTER'S CASE OF OVARIAN CYST.

tion of gas and great distress, the chances of success are diminished.

DR. POTTER.—I perhaps might have been a little more explicit. This patient was brought to me from the country some distance, and had been tapped by some one who apparently did not appreciate the importance of withholding the trocar in these cases, and from the history I concluded that the adhesions I found had been started by these repeated tapings. I think Dr. Morris has done wisely in calling atten-

tion to a fact which is now undoubtedly recognized by men practising abdominal surgery, viz., that it is wisdom to avoid early tapping. The preliminary tapping he speaks of I believe is a good suggestion in large cysts, in neglected cysts of this kind, so that there shall not be this sudden removal of pressure, thereby tending to increase shock. I may add that this point was considered in this case, but it was thought best to depend upon slow evacuation with careful compression at the time of the operation.

DR. JOSEPH PRICE, of Philadelphia, then read a paper on

THE SURGICAL CONCEPTION OF PERITONITIS.

Within the last few years there has gained, in the minds of those who have followed the principles of surgery, who always look for cause where there is an effect, a gradual clearing of their conception of the condition called "peritonitis." The word used to be whispered in awe, and the general idea of its existence was surrounded with a veil of mystery which, like the ark in the temple, none dared approach, much less touch. In the earlier days of abdominal surgery Baker Brown exclaimed, "It is the peritonitis that beats us," but, unluckily, did not stop to inquire or discover why peritonitis came upon the field conquering and to conquer. With the earlier surgeons, just as with the earlier and many physicians of the present, peritonitis was looked upon as an accident, and was treated accidentally, in the full sense of the word. Cause and effect were not sought for, and so were not found. When, finally, it was noticed that the cases dying of peritonitis had pints, quarts, or gallons of fluid in their abdomen—or blood, maybe—a relation between the two was finally traced, and much of the mystery was cleared away by draining. The idea once gained that a foreign matter had much or all to do with the condition, when serum was not found other cause was looked for, and so often discovered, either directly or through flaw in the operation, that now it is finally concluded that peritonitis is never accidental or idiopathic. This is true, at least, of the surgeons. So far as the exact diagnosis of the condition was concerned, little attempt was made toward it, though by physicians generally thoracic disorders of a similar kind were confidently located and treated. All in all, it has remained for surgery to clear away the error and misconception of the abdominal varieties of the disease, and even now to invade the thorax and urge in diseases therein peculiar that the same line of treatment be followed out as in the abdomen.

It needs no statistics to prove that but a short time since all cases of peritonitis were treated alike without any efforts

being made to discover the cause. Abdominal surgery, beginning with the grosser ovariectomy, demonstrated plainly that to ruptured cysts and twisted pedicles enough opium had been given to narcotize the land, and enough flaxseed wasted to oil the wheels of the universe. Once it was discovered that gonorrhea was readily transferred along the Fallopian tubes, the nature and pathology of many hitherto puzzling cases of abdominal inflammatory trouble was suddenly cleared up, and, therefore, of peritonitis due to another cause. With-in the memory of many still alive, childbed fever was looked upon as a visitation of Providence, and so treated by expectation and prayer. When Oliver Wendell Holmes, then a young man, insisted upon the essentially specific nature of the fever, two of Philadelphia's most renowned obstetricians derided, in the light of their great experience, the chimerical notions of the harebrained youth, who has since lived to see his views taught where they were once derided. This practical spirit of investigation *versus* faith, in all things that pertain to disease, nowhere has shone so brightly as in the domain of surgery, and nowhere in any set of diseases as in those formerly ranked under the head of peritonitis. High temperatures in the presence of plumbing, and their absence in presumably filthy localities where no plumbing was present, could not help but attract attention to the existence here again of cause and effect. This alone in all lying-in hospitals must ultimately be accepted as a demonstrated fact, and, if a perfect system is to be hoped for, will lead to the exclusion of all closets beyond the limits at which infection is possible.

In the modern gynecology many of the minor procedures are arraigned at the bar of surgery and compelled to render an account of themselves. Under this head come intra-uterine applications, use of the sound on all possible occasions, dilatation and scraping of the uterus and cervix, closure of the peritoneum and cervix, followed by ovarian and tubal disease. Here exact scientific surgery calls upon the minor gynecologist to keep hands off. It warns him that not every cervix can be touched with impunity, and that if there is suspicion of pelvic disease or inflammation such cervix is not to be touched at all. It teaches the "conservative" gynecologist, who tries to cure pelvic disease by the cervical operation, that shortly he will have a second and worse operation, due to his first.

The surgical conception of the nature of all operations upon the abdominal viscera has led not only to the abandonment of the dicta of the past, but to their utter and entire demolition. It has led to the annihilation of all statistics of the past as so much garret rubbish, and has laid out a new field for itself, into which no one but the elect under the new dispensation

can hope to enter. So far as traumatism is concerned, the prevention of peritonitis by prompt interference was sought. But experience in this very line has opened a new field in utilizing peritonitis as a saving agent in certain surgical procedures; I mean in intestinal anastomosis. In the presence of suppurative peritonitis, most common in women by reason of their greater risk and liability to external septic influences, the treatment is entirely revolutionized.

But now, if the surgical conception of peritonitis has opened up a new field of operative surgery, it has closed a most pernicious field in medicine. Where trauma exists or is reasonably suspected, the rule is now, not to wait and make the patient regardless of both life and death by opium, but to operate to save at once. Gunshot wounds excepted, perhaps nowhere so much as in appendicitis has trauma lately received so much attention as the cause of peritonitis. My success in these cases has been more than a justification for any statement concerning them that may seem too positive. They stand out in pleasant contrast with the opium-fed, poultice-clad mortuary list that every day is heard of. My own experience in this line of cases is increasing almost weekly, and the results of interference, surgically, are such as to encourage me as to the ultimate general acceptance of the opinion that most cases of post-partum suppurative peritonitis should recover. [In conclusion Dr. Price cited five successful operations for puerperal peritonitis.]

Discussion.

DR. A. VANDER VEER, of Albany.—To one brought up in the school of opium treatment, as those of us were who practised in the immediate vicinity of New York and that part of the East, schooled, as we were, in the teaching of Dr. Alonzo Clark, it seems a little as though we were living in the land of dreams when we are told to give up opium in the management of these cases. We would like to hear from Dr. Price something more positive, something more definite in the line of treatment of appendicitis and of puerperal peritonitis.

DR. W. L. ROBINSON, of Danville, Va.—This has been a very interesting paper to me. The difficulty that exists in my section of the country is in getting patients to permit us to operate.

In regard to the anastomosis, it is a subject I have been a good deal interested in. Allusion was made this morning to the strictures that would occur. When you have a gunshot wound of the bowel, you have either to resect or you will have still more stricture than you will get from anastomotic operation. You can do the operation in a shorter time than any I know of.

DR. GEORGE ERITY SHOEMAKER, of Philadelphia.—I would like to inquire whether, in the light of his recent experience, Dr. Price believes that cases of puerperal septicemia as well as of peritonitis should be operated on rather than be allowed to die? I refer especially to those cases where one cannot determine definitely the existence of peritonitis, and that have an absence of pain. I demonstrated in one case last year the absence of peritonitis in a septicemia case.

DR. JOSEPH HOFFMAN, of Philadelphia.—Dr. Price, I think, has laid down the lines of thought whereby we all after a while will separate peritonitis from medicine and put it into surgery entirely. The operation should be performed early, if at all. Surgery has no business to do post-mortem work.

So far as ordinary gynecology is concerned, the paper gives some very good points. If the curette is to be used at all it is to be used with great care. Cervical dilatation and scraping is also, I think, in the frequency with which it is now done, to be deprecated.

DR. WILLIAM H. MYERS, of Fort Wayne.—I desire to say just one word in regard to peritonitis. If we look in Heath's dictionary, perhaps the latest book written, he says the treatment is simple; it is opium, stimulants, and beef tea. I think the treatment is always symptomatic. The diagnosis ought to be made out early in the case before it is obscured by distention. Another point is in reference to appendicitis; it is well to bear in mind that it is not always accompanied by constipation. Another point concerning peritonitis is the rapid effusion which takes place. It is astonishing how rapidly the abdomen is extended; and the thirst is almost as great as the thirst in cholera. The opium treatment I object to, and can see no reason why it should be adopted.

DR. W. E. B. DAVIS, of Birmingham.—I believe, sir, that Senn's gas test for gunshot wounds of the abdomen, perforating wounds, will give us a great many more cases of traumatic peritonitis. I believe that is a step backward. We have just about got to the point where we thought it necessary to operate at once in all cases. The delay made by this test is a step backward. Four hours' delay is as long as we should permit. I live in a district where I see a great many gunshot and stab wounds of the abdomen. I want to insist upon the necessity of promptly operating in stab wounds, to save the patient from dying of peritonitis. We should always bear in mind that we have two kinds of peritonitis, viz., simple peritonitis and septic peritonitis. I believe the simple kind can be relieved by salines, but in these cases often you cannot use salines; then give calomel and large enemas of warm water. In cases of septic peritonitis we are wasting time not to operate at once. I believe that in gunshot wounds we should

give opium, *i.e.*, *give opium* and *operate*—operate at once. The same thing will apply to abscess. Give opium to relieve the pain, but operate just as if they were suffering.

DR. MORDECAI PRICE, of Philadelphia.—I differ with Dr. Davis in regard to the use of opium. He says if you give opium you will relieve pain. I say you will then have the patient suffering from the opium as well as the wound. Our business is to go into the abdomen at once. Get your instruments if you can; if not, go ahead with the best instruments you have. The wound ought to be closed immediately. I have seen within the last year ten or fifteen cases of peritonitis. In every case it could be traced to a distinct cause. Many of these cases are left to die when, if we made the effort, we might save some few of them. The object of this meeting is to educate the profession up to know that the danger exists, and that they should not cover up the fact that it does exist. I have been sent to these cases of appendicitis and found the patient battered down with opium, with everything to indicate that a few hours would be the last, and yet the physician did not recognize the danger before him.

DR. ROBERT T. MORRIS, of New York.—When salines are not borne by the stomach they can be injected into the colon; any deliquescent salt or glycerin, anything that will cause osmosis to the colon, will bring about the desired result—carrying off the fluid in which the organisms are migrating, carrying off ptomaines and giving relief to the patient. It seems to me we can get almost if not quite as good results by giving these remedies by the rectum.

DR. J. M. BALDY, of Philadelphia.—To the latest treatment of peritonitis just quoted—the treatment laid down of opium, stimulants, and beef tea—I would ask to add one more element, *viz.*, the undertaker, for I think he will be needed in nine cases out of ten. The sooner the present teachers stop teaching about peritonitis the better, and the better still for the laity who have to go to them. The picture by Dr. Price of the young man lying on his back, and the physician piling in the opium and saying his patient is better from day to day, is one we are all familiar with. I have seen that in the hands of some of the physicians of best repute in Philadelphia. In all cases where you do not strongly suspect pus I take it you should use salines first. A great many cases, probably the majority, of peritonitis will be cured by salines, if properly used. If not thus cured promptly, the only rational way of treatment is to remove the cause. I know of no case in this city in which the abdomen has been opened and a cause has not been found.

DR. J. F. W. ROSS, of Toronto.—The first point I would like to emphasize is this: we may have appendicitis existing

without any symptoms pointing to it. Lately, in Toronto, we have had such a case diagnosticated as typho-malarial fever. I would impress upon general practitioners that in all cases of septic peritonitis the abdomen should be opened.

DR. GEORGE H. ROHÉ, of Baltimore.—We do not always recognize light when we see it. It is probable that the light given us by Drs. Price and Hoffman is the true light, but give us a little time to recognize it; give those outside an opportunity to behold it. Let us be as bold as we please in action, but temperate in speech.

DR. JOSEPH PRICE (closing the discussion).—We have had rather a free expression from a class of men who have a right to express themselves plainly. They have all had painful and distressing experiences, due to delay and opium, and witnessed some sad death scenes, and the suggestion of moderation comes upon us like a load of hot shot. Had not I seen dozens of old and young dying battered down with opium, I would not be stimulated to so antagonize my friend from Baltimore. We all feel intensely about this opium subject, and we have a right to. We have a right to say that the present teachers have no right to teach as they do, without following surgeons for a while. If the teachers of therapeutics and practice of medicine will only follow the surgeons for a time, they will cure them of a chronic disease from which they have all been suffering—the opium habit. Dr. M. Price was exceedingly moderate; I am surprised that he was so moderate. I will refer to Dr. Vander Veer's question; multiple intra-abdominal abscesses are difficult to treat, indeed. You usually find them, not in acute, but in chronic cases.

One of the gentlemen reported a case of appendicitis that died in three days. If his surgery had been a little more thorough, I am satisfied that the patient would have lived longer than three days.

I alluded this morning to the opium treatment in bad cases; in such as little surgery as possible, but let it be well-directed surgery. Opium—again let me refer to it in conclusion—should be strictly withheld until the diagnosis is made. If the physician makes a diagnosis he can then use his judgment.

The concluding paper for the day was read by Dr. X. O. WERDER, of Pittsburg, on

THE ELASTIC LIGATURE IN THE EXTRAPERITONEAL TREATMENT OF THE PEDICLE.

Dr. Werder has treated three cases by the extraperitoneal method in which he used the elastic ligature—one myomectomy, tumor weighing over 38 pounds; two supravaginal hysterectomies.

In speaking of the advantages of the elastic ligature over the methods more frequently employed in this country, viz., the wire *écraseur* and the clamp, he laid particular stress on the following two points: (1) The elastic ligature gives *absolute security against hemorrhage*. (2) With it there is less danger from sepsis, because the dressings do not require to be disturbed for the first few days; nothing, therefore, prevents the formation of firm adhesions between the approximated peritoneal surfaces within the shortest space of time, thus securely excluding all septic matter from the peritoneal cavity that may subsequently form about the pedicle.

Discussion.

DR. FLORIAN KRUG, of New York.—The essayist has shown the advantage of the elastic ligature, of which I am perfectly convinced. I have, however, given up in my late operations the use of the extraperitoneal method entirely, though I have not gone back to the intraperitoneal treatment of the pedicle. It seems to me all the dangers from the suprapubic amputation arise from the stump. From the stump the hemorrhage and septicemia seem to come. What earthly good is it that the stump should remain? Why leave that stump in at all? Why have a pedicle? Take it out and you will not have any more accidents. That is the course I have adopted. I have done several operations and have not lost a case. I believe that the extraperitoneal method is better than the intraperitoneal, but I think the ideal treatment is to do away with the stump. Avoid all danger of hemorrhage as well as septicemia. It does not take any longer to take out the stump than to care for it in the proper way; and besides, in this way we get first-class drainage.

DR. JOSEPH PRICE, of Philadelphia.—I am pleased with Dr. Krug's discussion and presentation of his method, excepting the procedure of removing the stump from the vagina. The facility with which we should remove it above ought to be easier than removing it from below. I hope this method will be perfected. It will be a great improvement over the present methods. There is always an element of danger in vaginal drainage.

DR. KRUG.—I think Dr. Price misunderstood me. The original operation I advise is to do the entire operation from above. Only in one case where I thought I could get along quicker I put on the elastic ligature and removed it from below. I think the main difficulty is to find where to best make the first incision. I think an instrument pressed by an experienced assistant behind the cervix is a good guide to show where to make an incision without injuring the rectum. As

regards drainage, I cannot agree with Dr. Price that vaginal drainage is so defective. I consider that the vagina is the natural outlet for this as well as for menstrual blood. I have never seen come through a suprapubic drainage tube so much fluid as I have seen from my vaginal hysterectomies.

THIRD DAY—MORNING SESSION.

DR. WILLIAM WOTKYNs SEYMOUR read a paper on

PERSONAL EXPERIENCES WITH GALL STONES AND THE OPERATION FOR THEIR RELIEF.

The reader in 1885 made an exploration in a case which three months before had passed three gall stones, and as inalignant disease was found the wound was closed. Recovery from operation. At the autopsy, eight and one-half weeks after operation, plastic occlusion of common duct was found, malignant disease, and 26 gall stones weighing one-half ounce troy found in the hepatic duct and its ramifications, which were dilated.

In 1887 he operated for gall stones as a last resort in a case where he had advised the operation at the first visit, eighteen days before. One hundred and fifteen stones weighing 960 grains removed. Gall bladder sutured to wound, after a rent in it had been stitched with Lembert sutures and strengthened by a buttress graft of omentum. Patient died suddenly of collapse the fifth day. Ducts were patent, union good, no peritonitis. Death ascribed to delay and cholemia. The third case was the writer's own. During the three years which the disease lasted there were, among several hundred paroxysms, only two which were followed by noticeable jaundice. The attacks, at first infrequent, became more so until the spring of 1889, owing probably to driving over rough roads; they occurred once or twice a week. Finally during the summer of the same year they occurred not infrequently at night, and, soon after, the slight shaking from driving induced attacks so as to make his professional rounds a constant torture. During these attacks the pain was always epigastric, though the tenderness was in the liver and gall bladder, and not at all in the epigastrium or shoulder.

The writer went to Europe and was operated on November 13th, 1889, by Mr. Tait, at which time 114 gall stones were removed. Convalescence was very rapid. The patient was out the tenth day, and walked four miles the twelfth. The fistula closed the third week, and since the patient has been in excellent health. As a result of his observation of his own and numerous other cases, the writer concludes that—

1. Epigastric pain, with tender liver border, gall bladder, and clay-colored stools, are the cardinal points in diagnosis. Jaundice and shoulder pain are too infrequent to be of much value.

2. Medicines are of only temporary value in cases of gall stones, as we can never tell whether we have large or small stones to deal with. Medicines can only correct the constitutional vice leading to their formation.

3. Early operation will cure with but a very small fatality, probably less than five per cent.

4. Excision of the gall bladder should never be an operation of election.

5. Cholo-cystotomy satisfies all the requirements of operation.

6. Recurrences are as yet unknown.

7. Medical consultants wait for the autopsy to clear up the case rather than advocate an exploration.

Discussion.

DR. ROBERT T. MORRIS, of New York.—I think we ought to call for statistics and data of different members of the profession bearing upon this point, *i.e.*, as to what becomes of the cases of gall stones which go on for a term of years—cases in which there are no other marked symptoms, cases in which there are no profound disturbances, but cases in which gall stones undoubtedly exist.

One diagnostic point the doctor did not bring up—the nitric acid test after a paroxysm. For two or three days the stools should be collected, put in a wide pan, mixed with water, and the residue examined. Look for a residue; look for gall stones and inspissated bile. Then touch the residue with nitric acid in the pan, and it will turn a very bright red. It is not always easy to make a diagnosis.

The question as to whether stones can be dissolved or not is one probably that can never be settled, but patients are very frequently told by physicians that their gall stones can be dissolved. Jaundice does not often occur in these cases, unless the common duct or hepatic duct is stopped.

DR. JOSEPH HOFFMAN, of Philadelphia.—The question has been asked concerning the use of the bile. In two cases under my notice I have found the patient was extremely emaciated. There is no doubt that the cutting-off of the bile tends to this effect. The bile emulsifies the fats. It is a natural laxative and prevents putrefaction.

Next as to diagnosis. The way to diagnosticate is to find the stones. In two cases I have in mind there was no jaundice, the patients were merely sallow, and there was no pain

over the region of the gall bladder. The operation of scraping the duct I regard as dangerous. Mr. Tait's method of crushing in the duct is very well for him, but I think exceedingly hazardous, owing to the nature of the duct itself. Drainage from the bladder, if it can be positively stated that all the stones are removed, I think may be omitted; but because of its almost impossibility the drainage may be regarded as absolutely necessary.

DR. J. M. BALDY, of Philadelphia.—I think we must look in the future to medical treatment to a certain extent, not for relief after the gall stone has been formed, but for a cure of our patient after gall stones have been removed, or before they have been formed sufficiently to cause the trouble. If a patient has gall stones, *i.e.*, if he has passed some, we must look to medical treatment to prevent re-formation. I question much if they will not have return of gall stones after operation in many cases. The disease which caused them undoubtedly continues to exist. Patients sometimes pass the stones in large quantities for years. Then comes the question, I think, of the future, which is going to decide which is the best operation, the complete removal of the gall bladder or stitching. At present there is but one operation as a question of election—that is, stitching and draining.

DR. A. VANDER VEER, of Albany.—The case Dr. Seymour refers to as occurring in the practice of Dr. Nichols, of Troy, presented a condition which, in my observation, I have never seen a patient recover from. When a patient with the history of long suffering that attends a case of biliary colic reaches a condition of emaciation, and ecchymotic spots are found over the body, I have never seen it recover.

Dr. Sabin's case is one in which we have an illustration of the faith hung upon medical treatment of gall stones. Only five days before his death he attended a meeting of the County Medical Society, and I said to him: "Doctor, you are comfortable to-night, and yet you are a subject for operation; you ought to have your gall bladder opened to-morrow."

DR. DAVIS, of Birmingham.—There are difficulties in diagnosis, but an exploratory incision in these cases will do very little harm. I should object to removing the gall bladder. I would not favor sewing up the gall bladder and returning it to the abdominal cavity. A small opening only should be made in the bladder. I found once a stone down in the cystic duct; there was no jaundice in the case.

DR. W. L. ROBINSON, of Danville, Va.—The question has been raised whether we can prevent the formation of gall stones. I do not know that my observation has been sufficient to establish anything, but the indications from cases I have had under treatment quite early have seemed to demon-

strate the fact that the constant use of the white sulphur water prevents the re-formation. Whether it is due to its alkaline and antiseptic properties, or to reduction of the catarrhal condition of the duodenum and gall duct, I do not know. Those who have been drinking sulphur water at the springs will demonstrate the perfect saturation of all the tissues of the body in a short time. I had a patient three years ago who passed thirty-three gall stones in a short time, and was completely jaundiced till he was green. He has never had a return since, but has used the sulphur water faithfully. I had four other similar cases.

DR. SEYMOUR (closing the discussion).—I will be as brief as possible, but I feel there are certain subjects to be touched upon. With regard to the procedure of crushing the stone, I think excision the more surgical one; what the mechanical difficulties are I do not know.

With regard to the possibility of recurrence being a contra-indication of operation, we certainly would operate on stones in the bladder if they recurred a hundred times. Any one who has been through the tortures of gall stones, understanding the dangers of the complications that may arise in the case, feeling that he may be stricken down at any time, as I was once in the midst of an operation, will be thankful for relief for a few months. If I had died within a few months after the operation, I should have been thankful for that much relief. I think it is desirable in some cases to make examination of the urine for bile. A medical consultation in gall stones is not to be relied upon.

DR. RUFUS B. HALL, of Cincinnati, reported

A CASE OF EXTIRPATION OF A CALCULUS FROM THE URETER BY
THE COMBINED ABDOMINAL-LUMBAR SECTION.

The patient was a female, age 36 years. She had suffered for four and one-half years from an attack of obscure abdominal pain; the paroxysms varied in frequency from ten days to six weeks, and in duration from three to twelve hours. They were so severe that inhalation of chloroform had to be resorted to for relief. In all of the attacks the pain would suddenly disappear, just as it does in renal colic when the stone is forced from the ureter into the bladder. She never had hematuria, red blood discs or pus in the urine, or anything to suggest stone or other serious disease of the kidneys. Repeated examinations of the urine failed to detect a stone. The absence of these facts served to make the diagnosis more obscure. An exploratory abdominal incision was made, and a calculus was found impacted in the left ureter two and one-half inches below the kidney. The ureter above the stone

and the pelvis of the kidney were dilated into a great sac. The kidney appeared healthy. The lumbar incision was made down to the kidney and that organ incised, the sac invaginated from the inside, and an irregular stone the size of a large pea removed. A rubber drainage tube was placed in the kidney and the wound in the loin closed. A glass drainage tube was placed in the abdominal cavity for fear that the peritoneal cavity had been opened from the back. Patient suffered greatly from shock, which the operator attributed largely to the loss of blood from the kidney. Highest pulse after she rallied was 126, and highest temperature 100.8° F. for one registration only, which was the following day at 3 P.M. After that time the temperature varied from 98.5° to 99.5° . A very interesting fact was noticed, that the urine collected from the drainage tube placed in the kidney was almost equal to the amount secreted by the opposite kidney. The author has been unable to find the report of any case for the removal of a stone from the ureter by the combined abdominal-lumbar section.

The case is an interesting one :

1. On account of the great difficulty of a correct diagnosis before abdominal exploration.

2. The ease with which a correct diagnosis was made after abdominal exploration in this heretofore troublesome and obscure case.

3. If the case had been operated upon by the lumbar incision only, a correct diagnosis could not have been made, neither could the stone have been removed by that method, and the patient would have recovered with a fistulous opening in the loin.

4. It illustrates in a clear and concise manner the possibilities of the combined method of operating for extraction of calculi from the ureter.

DR. JOHN H. KELLOGG, of Battle Creek, presented a paper entitled

SPECIAL GYMNASTICS IN THE TREATMENT OF DISEASES PECULIAR TO WOMEN.

It is the effort of this paper to maintain the following propositions :

1. Defective muscular development is a prime factor in the etiology of a large share of the pelvic disorders to which women are subject.

2. That the mode of dress common among civilized women is a cause of deficient and asymmetrical muscular development.

3. That the dress commonly worn by civilized women is

productive of such disturbances of the relations and functions of the abdominal and pelvic viscera as lead directly to the production of functional changes in the uterus and its appendages.

4. That properly graduated exercises, with such an adjustment of clothing as will afford opportunity for free and unrestricted movements of every group of muscles in the body, is a most important therapeutic means in the management of a large class of pelvic disorders.

The first proposition is sustained by evidence drawn from the condition of savage women, and civilized women who have acquired good muscular development.

The second proposition is supported by arguments drawn from the physiological influence of normal respiration upon the abdominal and pelvic viscera, and experimental evidence derived from studies with the pneumograph upon Indian women, men and animals, and corset-wearing women.

The third proposition is sustained by evidence obtained by the above-mentioned means, and also observations made with an apparatus which I have devised for tracing exact outlines of the figure.

The fourth proposition is sustained by the results obtained in a large number of cases treated by the aid of special gymnastic exercises.

DR. FRANKLIN TOWNSEND, of Albany, then read a paper entitled

REPORT OF GYNECOLOGICAL CASES TREATED BY ELECTRICITY.

Seventeen cases in all were treated—four for intramural fibroids of uterus of large size accompanied by excessive hemorrhage; seven had simple catarrhal salpingitis, with dislocated and inflamed ovaries attached by perimetric adhesions, with uterus in retroflexion or version; two had subinvolution of uterus in retroversion with metritis, though the organ was mobile in both cases; one had a simple multilocular ovarian cyst; another was suffering from pyo-salpinx. The remaining cases, two in number, were of the type of women suffering from the result of exudations following abortion, where all the pelvic organs seemed matted together.

Résumé.—The result of my experience with electricity, as used in the cases mentioned, may be briefly summarized as follows:

1. I was much disappointed in the results derived from this mode of treatment.
2. That the treatment, to my mind at least, was carried out in the most "approved" manner.
3. That many of the patients objected to its use because

of the pain it caused them, though the strength of the current was comparatively mild.

4. Some objected to its use absolutely, because of its causing pain and making them worse.

5. That in two instances, where 120 milliampères were used, local erosions of the mucous membrane resulted.

6. That the time and number of "sittings" in each individual case seemed sufficient to prove or disprove its value as a curative agent.

7. That only a few cases were benefited by its use, notably the fibroid cases, in which the hemorrhage seemed to be controlled.

8. That these tumors were not diminished in their size by its use.

9. That pelvic exudations were not absorbed or even aided in that process by its use.

10. That the necessity of frequency of its application sadly wearies patients.

11. That the loss of time to the practitioner is not inconsiderable.

12. That the use of this method of treatment is by no means always unattended by danger to life.

13. That the claim or desire on the part of the patient, after a long and fruitless trial by this method of treatment, for operative measures if thought feasible, should command attention on the part of the practitioner.

14. That altogether I must confess to disappointment in this method of treatment in all the cases cited, and until I find something better, though still desiring to be conservative, I shall go back to my operative surgical work, in which, as a rule, success and permanent cure has obtained.

Discussion.

DR. G. BETTON MASSEY, of Philadelphia (by invitation).—I think this paper an interesting one, and it is one that presents more before us than it seems to. Dr. Townsend does not tell us what he knew about electricity before the bold experiments he went into. He does not tell us that by patient work he familiarized himself with one of the most subtle and powerful agents of nature. I presume he had not done so. He goes at it, I think, from the limited knowledge I can get from his paper, very vigorously, and his results are not what they should be. I think the paper brings before us, besides the general question of the use of electricity, the question of how it should be used and who should use it.

There are failures in the use of electricity in the best hands. I have now under my hands a case that will doubtless

be a failure, a case of fibroid tumor. It leads me to think that cases of that nature would doubtless be failures in other hands. I may mention a fibroid that has periods of great enlargement at the menstrual molimen. Nearly every month the fibroid will triple and quadruple its size, apparently by absorption of liquid matter simply, at regular periods, and generally monthly. That case was apparently helped, but after several months' observation, when we thought we had it under control, with great diminution in size—several months having passed without attacks of any kind—it recurred, and she is in an attack now. On the other hand, I have at the present time another case under observation—a case that has been seen by several members of the profession—where the same features were shown: not much aggravation of the menstrual flow, but intense pain at the periods, pain that for eight years has required one of the most skilful physicians of Philadelphia to treat monthly by hypodermics that had to be carried to the fullest extent. That case was placed under treatment about nine months ago, and to-day she passes painless periods and is walking the streets, years younger than she appeared when the treatment was begun. It requires a wide experience to determine in what fibroid tumors electricity will be best.

Another case is a small tumor and apparently does not increase at the periods, and is apparently smaller now than at the beginning of the treatment. I have reported elsewhere two cases of complete disappearance of fibroid tumors. Those cases I am perfectly willing to send any member of the profession to, to investigate their condition. They live in Philadelphia, and, as far as I know, are in good health. I have had other cases than the ones mentioned which have not given good results—cases, I may say, that were apparently amenable to electric treatment. In none of these cases, however, with the exception of one in which the treatment was not proper, has there been any untoward result. Strange to say, I find it difficult in a number of cases to control hemorrhage, though I find the bitterest opponents of electric treatment willing to concede that.

But little mention was made of a variety of trouble that I think electricity is sovereign in—that is, chronic metritis. That is a word almost unknown in the literature of gynecology at the present time.

DR. J. M. BALDY, of Philadelphia.—The time has arrived when those of us who do not believe in the benefit of this treatment should express ourselves frankly. I felt, as I heard Dr. Townsend's paper, that he has been recording my own experience. Who is to use this great, subtle power? That is the cry always from the electricians, that is the cry made by

those who favor its use. I saw Apostoli and his assistants apply electricity, and I have seen Dr. Massey and his assistants apply electricity, and I have seen these gentlemen look at the milliamperemeter, set the current going, and then watch the milliamperemeter. I saw nothing in all this that I could not do. The milliamperemeter is there, and we are worse than ignorant if we cannot read it. It is all nonsense, rank nonsense, for the so-called electrical specialists to talk as they do. In regard to what electricity will do, my experience has been that of Dr. Townsend. My experience comes from Dr. Massey's own applications. I have stood by and seen the patients, have studied the cases daily, and made a thorough investigation of the subject as far as he could give me the opportunity. Dr. Gardner reported to our obstetrical society two years ago some eleven cases. All were cured. I watched those cases fourteen months, and took pains to hunt them up. Not a case but one was even benefited, and that was only relieved. It was simply a reduplication of the cases Dr. Townsend has given us. In regard to the two cases where the fibroid disappeared, the cases were not fibroid tumors. The trouble with the electricians is, they are not gynecologists. They have no training whatever, and they are not competent to make a diagnosis.

DR. JOSEPH HOFFMAN, of Philadelphia.—The point Dr. Baldy made, that those who do not have success are not electricians and those who do are regarded as electricians, is a good one. Dr. Baldy says the electricians cannot make a diagnosis. That is right. Even the abdominal surgeons cannot always do so. Dr. Keith proves this. At the time his book was written his record of hysterectomy was unparalleled. He shows that in nearly every instance the diagnosis was incorrect. His whole book is full of it. It cannot be wiped out. Dr. Keith contradicts himself. Dr. Massey at the present time says he is applying electricity to a tumor that varies in its size. I say to Dr. Massey that if he is applying electricity to a tumor that varies monthly in its size he does not know that it is a fibroid tumor. It would be an anomaly.

DR. X. O. WERDER, of Pittsburg.—Within the last year I have been using electricity to some extent both in private and hospital practice. While I have had some successes, I have had more failures. I think electricity will do some good in some cases. It will relieve pain in many cases; it will relieve hemorrhage in some cases, though upon that point I have had more disappointments, perhaps, than successes. The reason of that possibly is that the electricians say large doses must be used to relieve hemorrhage. I found that most of those cases could not bear large doses. They could bear thirty, sixty, seventy-five milliamperes. I have

had some cases where bleeding was relieved promptly, but in a number of cases I had to curette the uterus to get relief.

DR. A. VANDER VEER, of Albany.—In 1873 I went over to Boston and spent several days with Dr. Cutter, looking up the subject of electricity in uterine fibroids. Dr. Cutter was kind enough to take me to some cases, and I saw him plunge into a large fibroid his large needle, without any knowledge of the amount of current he was using. Some of his cases were improved, and there were some fatal cases. I brought home the whole paraphernalia. I never had the courage to use those needles. I used my apparatus; I had a variety of batteries. I gave special and particular study to the subject. Except with an occasional case of endometritis fungosa, I became thoroughly discouraged, and I have sent my apparatus over to the hospital to be used there in cases wherein it seemed indicated.

I know the sincerity and the earnestness with which Dr. Townsend has investigated this subject during the past two years. I have heard him discuss the question. I know he has been thoroughly candid and honest. He has given to us that which he believes, and which is based upon a good, intelligent idea of the use of electricity, and no ignorance about it.

DR. JAMES F. W. ROSS, of Toronto.—I want to put myself on record as one who has not been able to see so much in electricity as others. I believe there are two or three conditions in which electricity is of use from its action as a caustic. As regards bleeding of fibroid tumors, I believe it does occasionally relieve the hemorrhage temporarily.

DR. GEORGE ERITY SHOEMAKER.—I have for the last eighteen years used electricity with such batteries as electricians offered for sale. I have never seen any permanent diminution of a fibroid tumor, though I have had them constantly under my treatment. I would much rather run the risk of hysterectomy than puncture. I do not like to say electricity should never be tried, for I have tried it, and I intend to keep on trying to use it in its proper field. That proper field is in the application to neurotic conditions, when you have pain to relieve.

DR. TOWNSEND (closing the discussion).—Certainly this has brought out extended discussion—a discussion that has been of interest to me. In regard to my ignorance of electricity, most of my knowledge came from Dr. Massey's writings. I have been disappointed in the use of electricity. Dr. Massey says its use is not mapped out thoroughly. I agree with him. I do not think electricity is yet in its perfection, but it may become useful. Of course my cases are limited, and at the same time I have lost a year's work in my own time, and these

cases are all to come to me or some one else later for operation.

THIRD DAY—AFTERNOON SESSION.

DR. WM. H. MYERS, of Fort Wayne, read a paper on

PUERPERAL FEVER.

DR. CHARLES A. L. REED, of Cincinnati, read a paper on
A DISCUSSION OF VAGINAL HYSTERECTOMY, WITH OBSERVATIONS
ON ELEVEN CASES WITH ONE DEATH.

The discussion was chiefly controversial and combated the positions recently taken by Jennings, viz., (1) that high amputation was less dangerous primarily than total extirpation; (2) that the ultimate results of high amputation were satisfactory; and (3) that total extirpation should be done only in cases in which the normal mobility of the uterus was lessened. Figures were cited to show that high amputation of the cervix had a mortality which compared with that from total extirpation in the proportion of seven to five; a case was presented in which death occurred as the result of complications to delivery occurring as a consequence of high amputation, and statistics were given showing the unsatisfactory character of the ultimate results from high amputation. The fallacy of delayed operations was demonstrated by citations from the eleven cases in the essayist's own practice. In one, although the uterus was removed, yet the disease was beyond the reach of the operation; in another the disease recurred at the site of removal after six months; while in a third, a case of medullary cancer of the endometrium, the patient enjoyed immunity from recurrence for nearly three years, when she died from secondary soft cancer of the peritoneum. The condition in this case, demonstrated at autopsy, confirmed the diagnosis, which had been doubted when the case was first reported (AMER. JOUR. OBST., August, 1888). The conclusion at which the essayist arrived was that we shall realize the same results as those achieved by Kaltenbach (3.2 per cent mortality) when our experience grows and when the general profession—into whose hands these cases first come—realize that it is their duty to make an early diagnosis and act upon the clearly established principle that every woman who has cancer of the uterus, and in whom the disease has not lessened the mobility of the organ, should be subjected to the operation of vaginal hysterectomy.

Discussion.

DR. JOSEPH HOFFMAN, of Philadelphia.—Just a few points in reference to the matter of statistics. Leopold's statistics, it

seems to me, are, all things considered, the best. Out of 110 cases of Leopold the mortality was only 5.55 per cent. Out of 80 operations for removal of cancerous uterus only 4 deaths, and 2 of these deaths were due, one to a blunder in introducing a suture through the rectum, and another a case in which there was found so much infiltration that the mass could not be removed, and the patient died from sepsis. Consequently the mortality out of 80 comes down to 2 or 2.5 per cent. The mortality comes down in vaginal hysterectomy to a proportion which we are led to consider very small, even in abdominal operations in these series. The question of drainage does not seem to enter here. The drainage must be perfect or the patient cannot recover. There are some things to consider, so far as the removal of the cancerous uterus is concerned—that is, the degree of fixation at which we must say the operation is not advised. This is more difficult because the infiltration is not always due to the cancer. That is one of the questions the operator must decide.

DR. F. KRUG, of New York.—I can indorse almost every word Dr. Reed has said. To my mind there is absolutely no place for high amputation in cancer of the womb. As compared with the vaginal hysterectomy it is more difficult, more dangerous, and more unreliable. Only one point I would like to lay particular stress upon. We have to impress on the mind of the family physicians not to lose valuable time, as is so often done.

DR. JOSEPH PRICE, of Philadelphia.—In the last decade uterine cancer has become very common. Since Emmet devised his operations for the closure of lacerations of the cervix it has become exceedingly common. Baker, of Boston, I think, conceived the high amputation and reported a large number of cases of cancer. In all, his results are in the main the best on record, but there lingers about those cases considerable doubt.

I see a large number of cases of cancer of the cervix, and it is altogether exceptional to find one with that normal uterine mobility Dr. Reed calls our attention to—perhaps only two or three in a year's experience. The invasion in about all of them is beyond the uterus. And it has been my experience in a vast number of these cases that the malignancy has occurred in those deep tears in the vault.

DR. GEORGE ERITY SHOEMAKER, of Philadelphia.—I think in discussing such a subject we are often blinded by looking at the mortality and forgetting the results. We forget the fact that if a patient is left alone she will live, on an average, two years. It was shown by statistics in Berlin that every one of the cases of extirpated uterus after four years was dead, while of the partial amputations twenty-six were still

alive. I think those statistics have not been properly met. It has been my experience to see many cases of cancer. I am more and more convinced that total extirpation of the uterus is not the thing to be done with the idea of securing permanent immunity. I have no doubt it is a more brilliant operation, but I believe, as far as ultimate results are concerned, total extirpation is not the most favorable operation.

DR. R. B. HALL, of Cincinnati.—It has been truly said that it is the ultimate results of these operations we want. I am a firm advocate of total extirpation of the cancerous uterus, or no operation at all. That is where I want to put myself on record. It has been quoted by one or two of the speakers that in high amputation the ultimate results are better than in total extirpation. I hold in my hand statistics of 105 high amputations of the cervix, recently compiled by Landers. At the end of the first year 45 remained unaffected; at the end of $2\frac{1}{2}$ years, 27; at the end of $3\frac{1}{2}$ years, 17; at the end of 4 years, 7; at the end of 7 years, not one. If high amputation gives us no better protection than that, and, as has been said, these cases live about two years without operation, and high amputation is fully as dangerous a procedure as total extirpation, it is an argument in favor of total extirpation or no operation.

DR. REED (closing the discussion).—I take this discussion as an evidence or indication that opinion on this subject is at least in a transition state, and that what has been called conservatism bearing on this question has received a shock. Dr. Price, who, we know, sees perhaps as large a number of gynecological cases as any man in America, comes into this presence and states that it is the rarest possible thing for him to receive a cancer of the uterus, involving any part of it whatever, that has not already advanced to the point of fixation; hence it is the rarest thing for him to do a hysterectomy for cancer. His practice entirely conforms to the teachings for which I am contending. I was surprised, however, to hear him state that in cases of cancer of the uterus the lymphatics are about as active as they are in puerperal fever. When we have cases of puerperal fever we have the lymphatic system at its very maximum of activity. In the case of an insidious invasion of uterine tissue by cancer, we find the lymphatic system with the lowest possible demands upon it for activity. For that reason I think the statement is a trifle overdrawn.

DR. JOSEPH PRICE, of Philadelphia, presented

A GROUP OF SPECIMENS ILLUSTRATING THE PRINCIPAL COMPLICATIONS AND VARIETIES OF PELVIC AND ABDOMINAL SURGERY,

which he discussed in reference to their pathology and treatment.

Discussion.

DR. H. F. FORMAN, of Philadelphia.—I do not think it fair on the part of Dr. Price to bring me here this afternoon to give an account of my laparatomies, because I did not save a single life. Regarding the extra-uterine cases I operated upon post mortem, I may say they were all cases of very early pregnancies—all between the first and third months—with the exception of one which I found in a sac in the abdominal cavity, and which was certainly one of the abdominal pregnancies, as the tube was nearly intact. This one case was a fetus carried to about six months' gestation, perfectly dry and encysted. It may have lain in the cavity for some time. All the other cases, twenty-eight in number, were tubal, as many on the right side as on the left. All but three were at the distal end of the tube. Three were near the uterus at the beginning of the tube. In some cases, in spite of the most careful search, I failed to find the fetus. I believe that some of those cases were hematomas, the result of former extra-uterine pregnancies, which led to renewed hemorrhage in the tube and subsequent rupture, or else the fetus did not come to its development. They were extra-uterine pregnancies beyond doubt, because microscopical examinations showed fetal membranes, and the decidua was in the uterus in all these doubtful cases. In some other cases I failed to find the decidua in the uterus.

In regard to the varieties of pregnancy, I inquired very carefully of some of the gynecologists of Europe whether or not there are abdominal pregnancies. Their views are divided as regards abdominal pregnancies.

DR. E. E. MONTGOMERY, of Philadelphia, also presented some specimens of diseased tubes and ovaries, and briefly detailed their histories.

At an executive session the following officers were elected :

President—Dr. Adam H. Wright, of Toronto.

Vice-Presidents—Drs. George H. Rohé, Baltimore ; Rufus B. Hall, Cincinnati.

Secretary—Dr. William Warren Potter, Buffalo.

Treasurer—Dr. Xavier Oswald Werder, Pittsburg.

Executive Council—Drs. A. Vander Veer, Albany ; Clinton Cushing, San Francisco ; Charles A. L. Reed, Cincinnati ; Lewis S. McMurtry, Louisville ; Rollin L. Banta, Buffalo.

The following-named Honorary and Ordinary Fellows were elected to membership :

Honorary Fellows—August Martin, Berlin ; Thomas Savage, Birmingham ; Lucas Champonnière, Paris ; Hiram Corson, Plymouth Meeting, Pa. ; Dr. Israel Green, Easton, Pa.

Ordinary Fellows—W. J. Asdale, Pittsburg; Eugene Prosper Bernardy, Philadelphia; Young H. Bond, St. Louis; Walter Coles, St. Louis; Carlton C. Frederick, Buffalo; Christian Fenger, Chicago; Lorenzo Fox, Lowell; Donnel Hughes, Philadelphia; Florian Krug, New York; Howard W. Longyear, Detroit; Robert T. Morris, New York; Paul Outerbridge, New York; Mordecai Price, Philadelphia; Edwin Ricketts, Cincinnati; W. L. Robinson, Danville, Va.; James F. W. Ross, Toronto; Isaac Scott Stone, Washington, D. C.; George Erity Shoemaker, Philadelphia; John Chase Sexton, Rushville, Ind.; George Gillett Thomas, Wilmington, N. C.; Milo Buell Ward, Topeka, Kan.

The next place of meeting is Washington, D. C., in May, 1891.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF CINCINNATI.

At the annual meeting held January 10th, 1890, the following officers were elected for the year 1890:

President—DR. W. H. WENNING.

Vice-President—DR. C. A. L. REED.

Recording Secretary—DR. THOS. P. WHITE.

Corresponding Secretary—DR. E. S. MCKEE.

Treasurer and Librarian—DR. J. L. CLEVELAND.

Regular Meeting, March 13th, 1890.

The President, DR. W. H. WENNING, in the Chair.

DR. J. L. CLEVELAND reported the following case of

DIAPHRAGMATIC ATRESIA OF THE RECTUM.

I saw the infant first when it was four days old. A midwife had been in attendance. The child's bowels never having moved, the mother and midwife naturally became alarmed. Ordinary simple remedies had been used without success, such as castor oil, soap suppositories, titillation with a feather, etc. When I was called in the infant's condition had become desperate; she had ceased to nurse and was vomiting at inter-

vals. The abdomen was greatly distended, and she was straining to defecate. An obstruction an inch and a half or two inches from the anal orifice was found. The nature of this could not at first be determined. In handling the parts the natural efforts of the child extruded the obstruction to the anal orifice. It had the appearance of the distended and darkly congested mucous membrane of the surrounding parts; how it should cover the rectal lumen was of course not at first apparent. The anal opening up to the obstruction was normal in calibre and appearance; so, also, the calibre of the rectum appeared to be normal. This membrane seemed to entirely cover the rectal vault like a tent. It seemed to contain fluid or semi-fluid. This suggested a course of procedure. A slight puncture was made into the membrane, which immediately revealed the character of the obstruction and of the contents. A free incision was made, and the opening was enlarged as much as possible with the finger. The amount of meconium that was discharged in a short time astonished me. The grave symptoms above described immediately passed away, and in a very short time the child was nursing and was restored to health.

In about one week I was called again to see the child, and found that the obstruction had again re-formed, but had not completely closed. I found that by using a little force I could break it down with my finger, which I did. So, to obviate further trouble, I dilated with my finger occasionally for several weeks, and advised the mother to resort to the same measure for a while longer. The child is now about four months old, and has had no further trouble.

The form of congenital defect reported, which is an abnormal septum in the continuity of the intestine, and which, so far as I can learn, is most apt to occur at this point—that is, just within the anus, or the junction of the rectum and anus—though it is the most innocent and easily remedied of all the abnormalities when recognized, yet, according to Ziegler, it is much more rare than atresia of the anal extremity. This septum would appear to be the rectal cul-de-sac of fetal development which is pushed down to meet the anal invagination of the skin, and for some reason the usual absorption of the membrane, has not taken place. Bodenheimer makes the statement that of the congenital deformities of the anus and rectum, males are more subject to those abnormalities that are complicated with the adjacent organs (the urethra and the bladder), while females are more subject to the simpler forms. My case was a female. Her relief was so easy and simple that it is hardly worth while to dignify it by the name of an operation. After witnessing the immense discharge that took place when the obstruction was removed in my case, it would seem that there

might be a possible element of danger, in a feeble child, of collapse or partial collapse from the rapid evacuation of the retained abdominal contents. In considering my case it had not occurred to me that there could be any danger from hemorrhage in such cases, until I saw in the *New York Medical Record* of July 7th, 1888, in the proceedings of the Society of German Physicians, a report by Dr. Wendt of a case of atresia recti where the obstruction was about two inches from the anal orifice, upon which he operated, and the child died from hemorrhage. The child was 2 days old when operated upon. The result in this case proves that this diaphragm sometimes is quite vascular. In my case the hemorrhage was insignificant.

DR. WENNING remarked that the deformity presented by Dr. Cleveland was comparatively rare. The speaker, in a general practice extending over nearly twenty years, a great portion of which was obstetrical, encountered this deformity only once, and that was quite lately. In this instance the new-born child was apparently strong and healthy, and externally presented no indication of any abnormality, until the second or third day it began to cry considerably and strain without being able to have a stool. The grandmother of the child at first gave it some simple laxative (molasses or sweet-oil), and, as this only made matters worse, introduced a soap suppository into the rectum, with a similar unfavorable result. When the speaker was summoned he at once suspected atresia and introduced his finger about one inch into the rectum, when its further progress was arrested by the existence of a blind pouch. Although the child strained violently, no corresponding bulging of the bowel above could be felt. It was therefore impossible to find how far the obliteration extended upwards. Several fine, long probes of varying thickness were introduced with the hope of finding a small opening somewhere, or at least a depression, as a guide for further operative procedures. Nothing, however, could be found except a very dense, apparently fibrous covering over the occluded bowel. The probe, which happened to be one with a sharp triangular point at the other end (the use of which was never clear to the speaker until in this instance), was then reversed and cautiously made to pierce the structure in a line supposed to be continuous with the bowel. After passing it in for a distance of at least one inch, flatus escaped and some thin, watery meconium. As it was now evident that the main cavity of the bowel had been reached, a grooved director was then introduced in the track of the probe, and with a probe-pointed bistoury an incision made in three opposite directions. This was followed by a loud report of wind and an enormous mass of black, tarry meconium. The open-

ing was then gradually dilated with bougies until the little finger could be easily introduced. After the bowel was emptied a large-sized bougie was left in the bowel for some time, and the mother or nurse directed to pass it often during the day into the bowel, with instructions to allow it to remain *in situ* for some little time. This was supplemented by occasionally also inserting the little finger. The child continued to improve, and, according to last reports, was in good health.

[*Note*.—The speaker learned, just after writing the above report, that the child continued well until it became about four months of age, when it died from inanition. The rectum, however, remained free.]

DR. EDWIN RICKETTS reported the following case :

FIBROMA WITH TWISTED PEDICLE.

This specimen I removed this morning at 10 o'clock. The following is the history : Mrs. D., æt. 50; widow; one child, died in infancy. First menstruated at 13 years of age. Been regular in menstruation until six weeks ago. The last six or eight times the flow lasted but for a day. No pain. One year ago last August—twenty-one months—she first noticed a swelling in her *right* side. It gradually increased in size, causing her no special inconvenience, until two weeks ago she was seized with pain, necessitating the calling of her physician. Dr. Gould, of Sheridan, O. Morphia was administered, and she has had to continue its use. I saw her for the first time last Saturday, six days since. She had no fever when first seized with the pain, she tells me, nor did I find any on my first visit; nor has she had any fever since coming into my house three days ago. Pulse 72, full and strong. At the first examination I found the uterus fixed and a hard mass above the symphysis. Above this and to her right, extending to the liver, was a cystic mass, which could not be separated from the solid mass low down in the pelvis. The mass as an entirety was firm and could not be made to change its position, be the patient on her back or on either side. To try and lift the mass from its bed caused much pain, so much that I had to desist. I could not get any history of rigors or fever. This led me to make the diagnosis of ovarian cyst, simple or twisted; but I could not differentiate in this case between cyst of the broad ligament and a fibro-cystic tumor. I felt sure that I had *one* or the *other*, and that the exploratory incision would bear me out in this opinion. In opening the abdomen, a dark mass presented itself, adherent to the abdominal wall, especially to the *right* abdominal wall, and high up. In breaking up these adhesions my hand came in contact with the pedicle—left ovary—two and one-half times twisted,

and the myoma, the upper edge at least two and one-half inches above the pubes. The contents of this twisted ovarian tumor were dark, similar to coffee grounds. I am at a loss to account for the absence of rigors and fever with the condition present. Could this cyst have rotated on its axis two and one-half times suddenly two weeks ago?

Its origin was from the *left* ovary, yet the cyst lay mostly in the *right* iliac region. With the myoma and cystic ovary present, I removed the ovary and Fallopian tube on the opposite side.

DR. RUFUS B. HALL reported an operation for the removal of a

CYST OF THE BROAD LIGAMENT,

and showed specimen. The patient was a widow for the past nine years, æt. 36. Mother of one child, 11 years old. She has never been a strong woman, and says she has had more or less pelvic pain for five or six years, for which she has been treated at various times. February 12th of this year she presented herself at the Gynecological Clinic of the Miami Medical College, complaining of pain in the right side of the abdomen of a sharp, lancinating character. Upon examination the uterus was found to be enlarged and somewhat fixed, and pushed towards the left side of the pelvis by the enlargement on the right side. The enlargement was fixed and very sensitive to pressure, and appeared to be about three inches long and about three in breadth. She had been losing flesh and strength for the past six weeks on account of the pain, which was so severe that she could not rest unless she was under the influence of morphia, and could sleep but little. Her occupation, that of cloakmaker, required the use of the sewing machine, which caused her to suffer worse. She was given local and constitutional treatment, with the hope of relieving the pain, but it steadily increased in severity. She was a regular attendant at the clinic up to April 19th. By that time she was suffering so much that she was unable to go to her work. I advised an operation, which she consented to. She entered the Cincinnati Free Hospital for Women April 22d, and I operated the 24th. Upon opening the abdomen I found an intraligamentous cyst of the right side, the size of a teacup. The peritoneum was divided over the cyst, and it was enucleated with considerable difficulty, except a small attachment to the uterus. This small portion, not larger than the little finger, was ligated and divided. The patient has made a rapid and easy convalescence, and is now able to sit up. The peculiarity in the case is centred in the fact that she suffered so much pain from the cyst. While it is

well known that broad-ligament cysts usually cause more pain than ovarian, yet it is quite uncommon to have one so small as the one presented to-night demand removal for the relief of pain. I have had but three other cases of intra-ligamentous cyst in my own work; they were all very much larger than this. In size they ranged from six to twenty-five pounds, and none of the patients suffered extreme pain as did this one.

TRANSACTIONS OF THE OBSTETRICAL AND GYNECOLOGICAL SOCIETY OF WASHINGTON.

Stated Meeting, February 7th, 1890.

DR. JOSEPH TABER JOHNSON, *President, in the Chair.*

DR. H. L. E. JOHNSON reported

A CASE OF ACCIDENTAL HEMORRHAGE FROM THE GRAVID UTERUS.¹

DR. SMITH opened the discussion. He spoke of the interesting and practical nature of the subject, and the result obtained by Dr. Johnson, of saving both mother and child, as almost without parallel.

This accident occurs usually in multiparæ. He mentioned a case with less fortunate results, occurring in a primipara, caused by a slight pressure on the abdomen. On the next day there was a slight discharge of clear blood; examination discovered a slightly patulous os, though it was sufficiently open to enable him to decide that it was not a case of placenta previa. On the following day a dead child was born, and along with it came a large black clot which would have filled a pint measure. Along with the placenta came a similar clot.

The placenta gave evidence of having been partly separated for some time. Symptoms of hemorrhage followed the delivery of the placenta, syncope, etc. Everything went well for six days. On the eighth day there was some fever. The temperature range was from 99° to 102° for a week. The uterus was not sensitive; he mopped it out with an antiseptic

¹ See original article, page 1215.

solution. Temperature rose to 105° , then dropped to 103° . Patient died nineteen days after delivery.

The prognosis in these cases is very grave. Park, quoting Schroeder, says the prognosis is more grave than in placenta previa. In many cases no cause can be given for this accidental hemorrhage. Park's patient ran against something. The hemorrhage is sometimes concealed. Treatment was most important. Modern authors advise rupturing the membranes, thus diminishing the area of uterine surface and thereby stopping hemorrhage; if hemorrhage continues, then use a tampon. He advises rupturing the membranes, or the use of Barnes' bags, if at hand.

DR. KING asked Dr. Johnson on what he made the diagnosis of "accidental hemorrhage" from placenta previa.

DR. JOHNSON replied that one can almost always reach the placenta through the cervix, if it is in a dangerous position. Besides, the history of the case showed it to be a case of accidental hemorrhage following a violent exertion.

DR. KING said, was not this a case of placenta previa? Battledoor placenta often occurs in placenta previa. He referred to the paper of Dr. Sawyer before the American Gynecological Society, in which he explained placenta previa by early rotation of the ovum as also producing the battledoor variety. He thought the case reported was a case of placenta previa; the nearer labor the more probability of hemorrhages; the membranes may have been thickened. He thought it was a marginal variety, which the doctor may not have been able to feel.

DR. JOHNSON replied that the character and decisive rupture of the membranes, opposite the placenta, did not admit the consideration of placenta previa entering into the case. He had never seen a battledoor placenta in placenta previa.

DR. W. W. JOHNSTON said this woman has lived through a series of symptoms that very few women have withstood. He referred to the large amount of albumin in her urine during one of her pregnancies. He recalled two cases of pregnancy in which the urine contained large amounts of albumin and casts, but both labors were easy and without accident; another case, seen late in pregnancy, suffering from general anasarca and albuminuria, in which the labor was also without any incident.

DR. PRENTISS asked Dr. King if there is much difficulty in diagnosing placenta previa. He had only seen four cases, and in those there was no difficulty in recognizing placenta previa. He also asked how far down must a placenta be to constitute placenta previa?

DR. KING replied that when the placenta is situated so low in the canal that it is too narrow to admit the child without

dilatation, it is in the "dangerous zone" and constitutes placenta previa. He said oftentimes one cannot discover it by examination.

DR. BUSEY did not think the correctness of the diagnosis could be doubted. The os was dilated to the size of a silver dollar and dilatable, and two or three fingers could have been easily introduced sufficiently far to exclude either a central or partial implantation of the placenta. The history of the case, and the fact that the tear in the membranes was nearly opposite the placenta, determined the location of the placental attachment and certainly excluded every variety of placenta previa.

He congratulated Dr. Johnson upon the satisfactory result of his method of treatment, but he thought, in a case in which the hand could have been so easily introduced, rupture of the membranes and delivery by turning would have been preferable.

DR. FRY agreed with the last speaker that the case reported was not one of placenta previa. The history presented, and the digital examination made, excluded that condition. The uterus dilates from below upward, and for such an amount of hemorrhage to occur from placenta previa when the os was only as large as a silver dollar necessitated implantation at the os. All obstetric writers recognize three varieties, and the marginal is the most distant removed from the centre of the os.

DR. FRY did not approve of the treatment adopted in this case. The hemorrhage must have ceased of its own accord, for the tampon, no matter how thoroughly applied, could not have checked such a bleeding. It could prevent its escape externally, but the woman would die from internal hemorrhage, as has often happened in similar cases. The only safety is secured by emptying the uterus and securing contraction. The proper course to pursue, he thought, was to evacuate the waters and deliver the child by turning or forceps.

The only good the tampon did in this case was to excite labor pains by irritation of its presence.

DR. KING said the opening in the membranes opposite the placenta of course excludes placenta previa; while he does not question Dr. Johnson's examination of the membranes, he would ask how they were examined.

DR. KING disagreed with Dr. Busey as to the propriety of forcing in the whole hand through the os uteri to perform version in these cases. The version should be accomplished by the Braxton Hicks bipolar method, with only one or two fingers in the uterus, as had been so successfully practised by Hofmeier and others in Berlin.

DR. J. TABER JOHNSON said there was little to criticise in

the case, as Dr. Johnson had been so successful, though his mode of practice lays down a dangerous obstetrical precedent. A tampon in the vagina of a woman nine months pregnant is a dangerous procedure. Certainly a dangerous principle of treatment is suggested. Our object should be to get an empty and contracted uterus. The plan already suggested of rupturing the membranes and making pressure over the uterus is preferable, and is securing contraction from above downward, in imitation of nature's methods, and thus in obedience to the correct principle for arresting hemorrhage from the pregnant or recently emptied uterus.

He referred to a case of accidental hemorrhage in a multipara eight months pregnant. She was urinating in a vessel when the vessel broke, and in jumping up suddenly to save herself she became very faint and weak and was put to bed at once, though there was no escape of blood until later on next day, when it came very profusely. The membranes were ruptured, os dilated, and continuous pressure made on the abdomen, which soon brought on labor pains, and in a half-hour a dead child was delivered; one-half of the placental surface was blackened, thus showing where it had been torn from its attachment. The woman, though she was very pallid for a long time, finally recovered.

Dr. H. L. E. JOHNSON, in closing, said from the appearance of the membranes he was convinced his diagnosis was correct. As to mode of treatment followed, it occurred when he was unprepared with instruments, etc.; the tampon is a great excitant of uterine contraction, and he relied upon this to check hemorrhage and produce pain and dilatation, which occurred. It was an improvised Barnes' bag. He does not question the recognized forms of treatment.

His leaving the woman to secure instruments, etc., was unavoidable, as he had no one to send, and besides time was saved by going himself. He thought the only criticism that could be made was that he went to the case not properly armed, as is urged by Dr. King.

ABSTRACTS.

1. PROFANTER, P.: THE BRANDT METHOD OF TREATING PROLAPSUS UTERI BY MASSAGE. (*Translated and abridged by KATE C. HURD, M.D., Prof. of Physical Culture, Bryn Mawr School, Baltimore, Md.*)—It is more than a quarter

of a century ago that Major Thure Brandt, a medical gymnastic teacher and practitioner from the Central Institute of Stockholm, while practising his profession in Norrköping, received for treatment a case of prolapsus of the rectum in one of the soldiers of his regiment. He placed the patient in the lithotomy position, replaced the prolapsed bowel, and at the same time pressed his right hand so deeply into the pelvis as to seize the intestine and draw it upward, thinking that by so doing he might stimulate the relaxed muscles. By this simple manœuvre he effected a permanent cure.

Two years later Brandt heard of the frequency of prolapsus uteri in certain provinces of Sweden, and immediately the question occurred to him: Why cannot this affection be cured by massage as well as prolapsus of the rectum? He immediately made a careful study of the anatomy and pathology of the female pelvic organs, and formulated a treatment which, in accordance with the most strict laws of physiology and anatomy, should replace and hold in position uteri prolapsed or otherwise misplaced, without the aid of pessaries or other mechanical appliances. Some months later there went to consult Major Brandt a woman, 47 years of age, who had suffered seven years with prolapsus uteri, so that she was unfitted to perform her daily work. In fifteen days Brandt by his method of massage had worked a complete and permanent cure of the prolapsus.

Gradually he won a considerable reputation throughout Sweden by his cures; and his increasing number of patients enabled him more perfectly to establish his method and to acquire an extraordinary facility in gynecological diagnosis.

Brandt's attention was early drawn to the symptoms attendant upon prolapsus uteri—constipation, varicosities, poor circulation of the lower extremities, venous hyperemia of the pelvic organs; all of these symptoms he treats, according to the individual needs, by medical gymnastics. Moreover, by stimulating the muscles, by drawing the venous blood away from the pelvis and hastening the arterial circulation, absorption of exudates is greatly favored, and the deep, regular inspirations have a powerful suction effect upon the vena cava inferior, diminishing the pressure in the thoracic duct, increasing the action of the heart, and more properly oxygenating the blood. All of these means act as powerful stimulants to resorption of old exudations.

He claims to have cured many cases of parametritis, perimetritis, chronic metritis, changes of position caused by cicatricial contraction of the ligaments, and in 1865 he formulated a complete system of bimanual methods of replacing a retroverted though free and mobile uterus, and of the various methods of bimanual palpation for exploring the abdomen by

the vagina, by the rectum, by the vagina and rectum. Many physicians have condemned this treatment from lack of knowledge of the methods employed; others who have been to Brandt's clinics and there have learned to appreciate his success, on returning to their own fields of labor and undertaking to treat what seemed to them similar cases by Brandt's methods, have failed to effect like cures, simply because they were not minute diagnosticians and had not fully comprehended the details of Brandt's principles. Exact bimanual palpation and thorough knowledge of gynecology are necessary in order to surmount all of the obstacles which arise during the course of treatment of prolapsus.

A few Swedes interested themselves in Brandt's methods; but others, regarding him as one of the laity, hence a charlatan, condemned those who even tried the treatment, and the discussions of the subject at the medical meetings, being in Swedish or Danish, received very little notice in other countries. It was as a sceptic that Dr. Paul Profanter went to Stockholm to find out what was the truth of the reports of this new treatment which had been so contradictorily represented. In the monograph from which I am quoting he says: "Owing to the kindness of Major Brandt I was admitted to his clinics and was enabled to see for myself the application of his methods, and to satisfy myself every day by digital examinations as to the nature of the affection, and to note the progress of the case. I was astonished to see the care with which he diagnosticated, even to the most minute details, the state of the pelvic organs; what extraordinary skill he used in bimanual palpation; and, finally, the surprising results obtained in the most varied affections of the pelvic organs. My doubts and my erroneous ideas of Brandt and his method were gone. Perfectly convinced that I had found in this manual treatment a process of cure destined to play an important rôle in the treatment of certain affections of the female pelvis, I made myself acquainted with the methods during the winter of 1885-86, and, having learned from Brandt himself the indications and contra-indications, I returned to Germany.

"To cause the method to be favorably received, it was necessary to demonstrate its value at the gynecological clinic under the patronage of a recognized clinician. Prof. Schultze, of Jena, the first German authority on displacements of the uterus, replied to my request that he was ready to put the material of his clinic at my disposal and to criticise the work from a purely objective standpoint. Accordingly, Brandt, Nissen, and myself went to Jena, in November, 1886, and were favored with a certain number of patients for treatment.

"The cases which were given into our care were, from the

very first day, denied all other treatment. There was given to them no kind of medicine, either for internal or for external application, no tampons, no cataplasms, no irrigations, no lavements, etc. On the contrary, all of these patients were ordered, when away from the hospital, to take as much exercise as possible in the open air. The result which would be obtained in these cases could then only be attributed to the manual treatment.

"The cases which Prof. Schultze had given us were sixteen in number and consisted of parametritis, perimetritis (both subacute and chronic), ovaritis, periovaritis, retroversions, descents, total prolapsus of the uterus, and one case of recent hematoma.

"The treatment extended over from two to eight weeks, and was followed by cure in nearly every case. In those not cured there was a marked improvement (a prolonged sojourn at Jena was not possible for us).

"In no case was there fever or any ill effect during the continuance of the treatment.

"I published at that time the results obtained at Jena in a monograph called 'Massage in Gynecology' (Vienna, 1887, Braumüller).

"This work commences with an introduction by Prof. Schultze, in which he enumerates the great advantages of Brandt's method by extension and detachment in the treatment of old perimetritic bands around the uterus, as well as in the cases of total or partial prolapsus of that organ.

"Following this publication, which had awakened their attention, Dr. Resch, of Greifswald, and Prof. Schauta, of Prague, went to Stockholm to study there the method of Brandt.

"Resch (*Centralblatt für Gynäkologie*, 1887, No. 32) and Schauta (*Prager Med. Wochenschrift*, 1887, No. 43) called attention to the excellent results obtained by Brandt, particularly in subacute and chronic inflammations of the cellular tissue of the pelvis, in the displacements of the uterus or of the adnexa, in cases of hemocele, and, finally, in the relaxation of the uterine ligaments following total or partial prolapsus.

"Schauta also pointed out the indications and contra-indications, with a detailed description of the different manual manœuvres.

"Moreover, Sieffaert ('Die Massage in der Gynäkologie,' Stuttgart, 1888), who, during the time that Brandt was in Jena, had assisted us and thus learned the method, published twelve cases of cure of less important affections.

"When the German edition of the present work was in the press, a paper from Prof. Von Preuschen, of Greifswald, in the *Centralblatt für Gynäkologie*, 1888, No. 13, appeared.

"Von Preuschen, who also had been in Stockholm for several

weeks and had visited Brandt's hospital, reported the cure of a total prolapsus uteri of thirty-one years' duration, which he, after his return to Greifswald, had treated by this method. Von Preuschen furthermore gave a scientific definition of the action of this process in the cure of prolapsus, and proposes in the future to publish a more important work on this subject."

The scientific definition of the process as given by Von Preuschen is, in some particulars, a contradiction to that which I give here.

The essential points in the treatment of gynecological affections by Brandt's method must not be overlooked:

Brandt's method can only be practised by a capable physician, and one who possesses all the knowledge necessary for a good gynecologist. Attempted by an inexperienced person it may become of the greatest danger to the patient. To quote from B. S. Schultze: "It requires a diagnosis of the pelvic condition much more exact and detailed than is demanded by many other methods, for the treatment of the same affections."

He who, without having made an exact diagnosis, undertakes the different manœuvres taught in Brandt's system, may easily cause aggravations of the disease—for instance, in purulent wounds of the pelvic tissues, gonorrheal affections, tuberculosis, etc. He who, with brutal hand, would tear away a fixed uterus would expose his patient not only to severe hemorrhages which might compromise her life, but to mortal lesions of the intestines, etc.; and an unskilful movement while endeavoring to detach adherent ovaries might do infinite harm.

The application of this method is not easily learned, for, like everything in the practice of medicine, it cannot be taught by books. To learn how to do it one must see it well done, and then devote much time and no little labor before he can be called skilful.

An indispensable rule is that this treatment must be applied exclusively by physicians, and particularly by gynecologists, if the brilliant results are to be acquired which Brandt himself has obtained in thousands of cases with not one death.

Brandt's cures in the cases of old chronic prolapsed uteri seem at first almost impossible when we think of the numerous operations required to keep the organs in position by surgical means; and it is remarkable that old chronic pelvic exudates, chronic inflammations, malpositions of the uterus and adnexa, should be transformed into healthy normal conditions by means of comparatively few bimanual movements.

It seems highly absurd, at first thought, to attempt to cure a hyperemic, prolapsed uterus by a method which must still more stretch its already relaxed supports; but at the same time we must remember that this very massage will stimulate the relaxed muscles and ligaments.

During Brandt's visit to Jena several cases of prolapsus uteri were observed and treated by the bimanual method only.

The following case was under treatment for four weeks, and was sent to her home perfectly cured :

Louise Sch., of Corpeda, a farmer's wife, 33 years old. She had always been well except during an epidemic of measles when a child. Menstruated at 18 years; periods irregular, painful, and slight.

Married in 1875. Had three pregnancies. First labor normal; remained in bed only two days. About the middle of the second pregnancy, while turning a threshing machine, she suffered a uterine prolapsus, which increased until the second labor, which was more difficult than the first. She remained in bed eight days at that time, and then went to work as before, despite the prolapse.

Third labor, in 1879, very difficult; patient "strained" her abdominal muscles, and was confined to her bed for nine weeks. When she again returned to hard work the prolapse increased and became complete.

In 1884 she consulted a midwife, who replaced the uterus and inserted a pessary, which did good service for six weeks and was then removed. The prolapsus returned.

Patient complained of weight of the abdomen, of a dragging sensation in the pelvis, vesical tenesmus, painful micturition, severe pain during menstruation with slight flow, cold feet.

Condition, December 29th, 1886.—Patient sufficiently robust, mucous membranes a little anemic, tongue coated, respiratory and circulatory apparatus normal. Under anesthesia the uterus was found to be deviated to the left and backward. Complete prolapse of vagina. Orifice of urethra in angle formed by prolapsed vagina. Sound penetrates the bladder $8\frac{1}{2}$ cm. No rectocele. The prolapsed vagina and uterus can be easily pushed into the pelvis and the uterus placed in ante-flexion. Uterine orifice very large, torn, everted, anterior lip ulcerated. In ante-flexion the sound passes only 8 cm., meeting then an obstacle: when the uterus is prolapsed the sound passes 14 cm.—*i.e.*, to the fundus (Fig. 1).

Treatment, December 30th.—The prolapsed uterus was pushed into the pelvis and placed in normal ante-flexion. It was then kept fixed in the pelvis by the tension of the left fold of Douglas' pouch; it was drawn to the left in retro-position and in retroversion.

After each treatment patient assumed the dorsal decubitus for fifteen minutes, and the remainder of the day she was allowed to walk about, but not to go up-stairs during the first part of the treatment.

December 31st.—No prolapse, but same position as December 30th.

January 1st, 1887.—Uterus much diminished in volume; cervix less hypertrophied; $\frac{1}{2}$ cm. higher.

January 2d.—Uterus in a more central position, quite straight; no retroversion.

January 9th.—Menstruation; no descent of uterus.

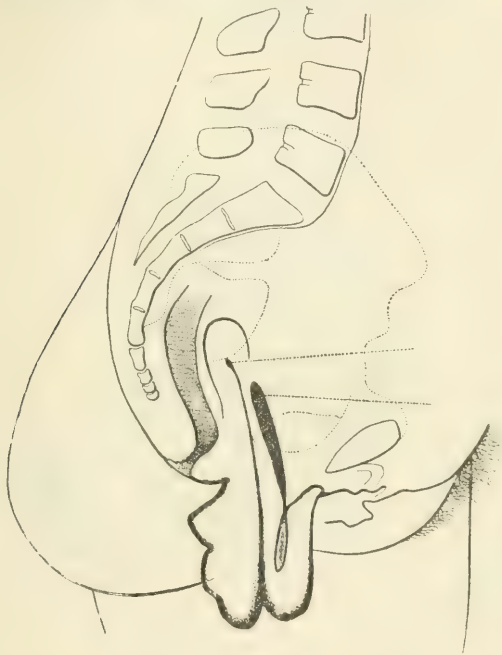


FIG. 1.

January 11th.—Uterus slightly anteflexed and in median line.

January 14th.—Body of uterus much smaller; neck less hypertrophied; eversion of lip disappeared. Contrary to her orders, patient took an hour's walk out-of-doors, and brought on a partial return of the prolapsus and retroversion.

January 16th.—Uterus at normal height and anteflexed.

January 20th.—Allowed to walk half an hour; no change

in position of uterus. During the following week patient took walks for an hour, or even two hours, each day. Uterus remained in normal position, and vagina became more and more firm.

Actual condition when discharged January 31st, 1887 (Fig. 2).—Uterus anteflexed and in its proper position; cavity



FIG. 2.

measured 9 cm. Patient felt perfectly free from any of the symptoms of prolapse, and was discharged without any pessary.

February 20th, 1888, patient presented herself again at the clinic at Jena for examination. She gave a history of complete freedom from any of the pains or inconveniences which had existed previous to her course of treatment, and had been able to do heavy work in the house or field. After June,

1887, she suffered from no more headaches; menstruated regularly every four weeks without pain, the quantity moderate, lasting three days.

Patient appeared to be in very good health, not at all anemic. Local condition: Vulva presents an orifice of 2 cm.; perineum $1\frac{1}{2}$ cm. long. The vaginal canal is of moderate size, the walls scarcely wrinkled; anterior lip of uterus 5 cm. be-

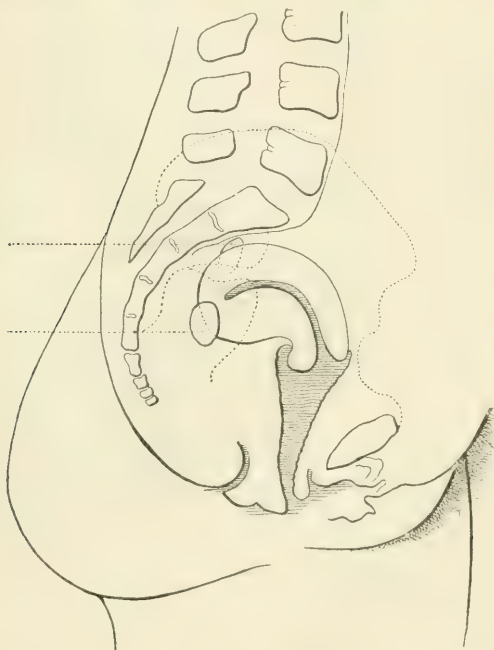


FIG. 3

hind and above the lower border of the symphysis; cervix slightly lacerated on each side; anterior lip short ($1\frac{1}{2}$ cm.) and thin; posterior lip thick; body of uterus is retroflexed into the cavity of the sacrum, slightly increased in volume. The left parametrium is soft and insensible to pressure; the left ovary is felt at the sacro-iliac articulation on a level with the second sacral vertebra (Fig. 3).

The right parametrium is equally soft and insensitive, and the right ovary in Douglas' cul-de-sac, at the right of the fundus uteri, is a little larger than the left, but not painful on pressure.

The uterus is freely movable and easily replaced in normal antelexion. In this position the anterior lip has the same

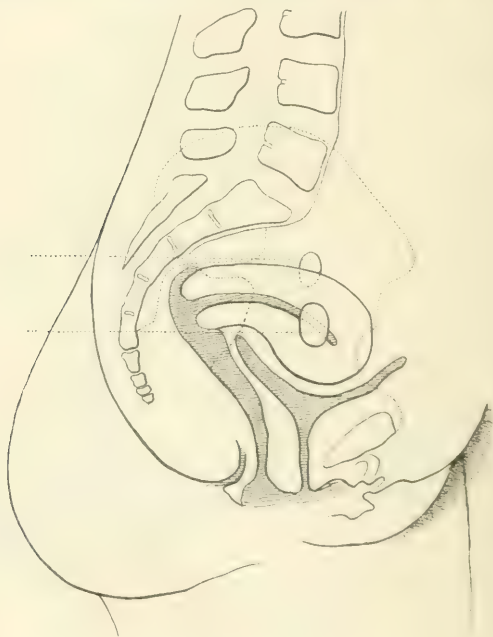


FIG. 4.

length as the posterior, $1\frac{1}{2}$ cm. (Fig. 4). The fundus uteri is behind the symphysis; left ovary at the plane of the pelvic inlet, near the centre of the internal border of the psoas muscle. The right ovary is a little below the plane of the pelvic inlet. The fallopian tubes can be felt; are neither hypertrophied nor painful. The sound passes into the uterus $8\frac{1}{2}$ cm.

The result in the case of this patient, one year after the cessation of treatment, may be considered very good as com-

pared with the result of most of the surgical operations for the same condition, especially since she resumed her arduous field and house labors immediately on leaving the clinic. It could not be called as complete a cure as the majority of Brandt's cases from the point of view of antelexion, which he always aims to obtain.

After operations for the cure of prolapsus uteri, anteversion or flexion is only occasionally found, and Schultze considers the retroposition as caused by inflammatory or cicatricial processes resulting from the operation, which lead to the shortening of the relaxed supports of the uterus, and thus a pathological condition is created instead of a physiological condition as in Brandt's cases.

To give the treatment according to Brandt, you need a couch four feet long and two feet four inches wide, solidly stuffed and flat. This should be the same height as the seat of the operator's chair. The patient's clothing must be entirely loosened, and the bladder and rectum empty. She assumes a half-lying, half-sitting position on the couch; her head and shoulders are raised and inclined forward by cushions, her knees and thighs strongly flexed on the trunk. In this position the pelvis rotates upon the heads of the femora. The lower part of the sacrum serves as a point of support for the pelvis, whose angle of inclination is diminished. The symphysis pubis is perpendicular to the plane of the couch; the vagina takes a horizontal direction. The cushion for the head is so placed that the chin almost rests on the chest. This relaxes the abdominal integument and prevents the contraction of the lumbar muscles.

The operator's position is at the left of the patient, his face turned toward her. He introduces his left index finger under her thigh into the vagina without uncovering her, and rests his left elbow upon his left knee, thus making the treatment less fatiguing to himself and at the same time gaining in surety and exactness of touch. His right hand is placed upon the patient's abdomen just above the symphysis pubis.

In conditions where there are exudates to be softened or cicatricial bands to be stretched, the finger in the vagina merely presses the organs toward the right hand, which, outside on the abdomen, executes the rotation or other movements. The middle, ring, and little fingers of the left hand should not be bent, for either cramps and fatigue to the operator, or discomfort to the patient from the pressure of the knuckles on the perineum, would be the result.

Before beginning the local treatment of prolapsus, the patient stands, bending forward, resting her hands for support on a table, and a light tapotement is performed upon the sacrum. These movements should be repeated less frequently

when there is hyperemia of the pelvic organs than when there is a condition of anemia, as in amenorrhea, atrophy of the uterus, etc. They are done by the fist.

Light tappings of short duration cause contraction of the vessels, but if prolonged a considerable vascular dilatation results. During menstruation these tappings are contra-indicated, because they augment the flow of blood. In a condition of prolapsus the tapotements cause contraction of the vessels and stimulate the pelvic nerves.

For the treatment of prolapsus uteri it is necessary to have a competent assistant, who, in the manner described above, will, with the left hand in the vagina, replace the uterus in a normal position, and indicate to the operator the exact position of the fundus. Without the assistant he might fail to grasp the uterus, or even crowd it back into the sacrum.

The operator sits at the foot of the couch, facing the patient, and places his hands in supination on her abdomen, the tips of the fingers against the symphysis and on both sides of the right hand of the assistant. He then gives a light, tremulous motion to the abdomen, and gently pushes the intestines upward, at the same time leaning far forward and letting the tips of his fingers glide down into the pelvis on each side of the fundus uteri, and grasps the uterus between his hands. This motion causes the uterus to become more anteflexed from the crowding back and stretching of the vaginal portion and peritoneum.

At this moment the assistant withdraws his right hand, and the operator slowly and with great care raises the uterus between his hands, drawing it upward in an arc corresponding to the curve of the pelvis. This should give no pain or discomfort to the patient, and when the uterus has been raised to its maximum height it should glide from the operator's hands very gently and slide back into the cavity. Any sudden movement would give the patient severe pain, owing to spasmodic contraction of the muscular fibres.

As the uterus sinks into the pelvis the assistant again maintains it in anteflexion, and all of the surrounding tissues contract to hold it there. Sometimes the contraction of the vagina is very markedly felt around the tip of the assistant's finger.

This operation should be performed gently at the beginning of the treatment, and repeated two or three times during each visit. In the intervals between the upward stretchings the assistant passes his index finger by slow, circular movements from the fundus uteri toward the internal orifice, in order to lessen the passive hyperemia by causing slight contractions which empty the dilated veins. By this means the

diminution of the volume of the uterus is sometimes considerable, and even appreciable by the sound.

Great attention must be given to the details of this treatment. At the least indication of pain evidenced by the patient there must be immediate diminution of the pressure or tension.

The assistant must never lose control of the position of the uterus, and must not allow the operator to grasp it improperly, as it is often very difficult from the outside for the operator to be certain of the position of the organ when it is to be drawn up.

No grease of any kind should be used on the abdomen or on the operator's hands, either while replacing the uterus, in the massage of exudates, or stretching of adhesions, etc. It is even better to work outside the chemise, that the hands may be less likely to slip on the abdominal integument.

After this operation Brandt gives a "knee resistance" movement to strengthen the muscles of the floor of the pelvis, the levator ani, the adductors and abductors of the thigh. The patient, still in recumbent position, raises her buttocks by supporting herself on her elbows and the soles of her feet; her knees, which had been separated, are then approximated against resistance from the operator. This exercise is given three times, then its reverse, *separation* against resistance, is tried. Several times during the day the patient should lie down, cross her feet, and alternately contract and relax the levator ani muscle in order to still further increase its strength.

Von Preuschen attributes the chief importance in the cure of prolapsus uteri to this exercise of the adductors, the levator ani, and muscles of the pelvis. He believes this factor to be the most important in causing the fixation of the uterus in the pelvis (the mere replacement being, according to him, only the necessary first step), and in retaining it in position of ante flexion. The levator ani, moreover, limits the calibre of the vagina, and, by contracting, divides the canal into two portions, the lower oblique and the upper horizontal. The vaginal portion of the uterus rests upon this horizontal portion of the vagina, and the more the lower part is contracted, so much the more is the uterus prevented from falling.

According to Brandt and Profanter, the replacement of the uterus in position is the most important part of the treatment, and the exercise of the adductors plays a secondary rôle. During the early part of his practice in uterine massage, Brandt cured about forty cases of prolapsus uteri by simply replacing the uterus without the exercise of the adductors, though the cure demanded a longer time.

Von Preuschen has not been able to demonstrate the proof

of his theory by one single cure through the exercise of the adductors alone.

After the abduction and adduction of the knees, the patient should rest for five or ten minutes in the abdominal decubitus, having turned gently without rising. In this position she respires from the thorax alone, the intestines slide downward and forward, the pressure in the pelvis becomes almost nil, and the now anteflexed uterus will remain in position. While taking this rest the gentle tapotements are again made upon the sacrum.

Should the patient resume the erect position immediately after the treatment, the abdominal walls and diaphragm would suddenly contract, and the intestines would crowd the uterus downward and backward out of its normal position.

The mechanical excitation of the muscular fibres of uterus and vagina, of the ligaments, arteries, veins, lymphatics, and peritoneum of the pelvis, is followed not only with an irritation starting from the spot stimulated and extending much farther, but with actual contraction of every fibre. The contractility of the unstriated muscle is much more slowly produced than of the striated, but the contraction is of incomparably longer duration.

It is upon the same principle that massage of the abdomen is given to increase peristaltic movements of the intestines. There can be no doubt that the pelvic peritoneum exercises a decided influence upon the position of the uterus. In the case previously cited it was not until the sixteenth treatment that the uterus was directly in the median line; the peritoneum, from the effect of its daily treatment having returned to its normal condition and regained its elasticity and contractility, acted upon and improved the position of the uterus until normal and perfect anteversion was obtained.

One year later the uterus was again retroflexed, but at its normal height, the *calibre of the vagina was more contracted, the uterus and adnexa completely free and mobile*. The pathological position had not been caused by any inflammatory process. Hence there could only have been a relaxation of the pelvic peritoneum, owing to the severe labor which the patient undertook immediately after leaving the clinic; in other words, she exposed herself again to the influences which caused the original prolapsus.¹

The pelvic peritoneum covers the fundus uteri, its sides, and its whole suspensory apparatus; this and the coats of the vessels contain smooth muscle fibres. Why should not daily

¹ The woman was a wood gatherer in a dry forest. By means of a long stick to which was fastened a curved knife, she drew down the largest dry branches and cut them off, as much by strength as by the weight of her body. In these positions she greatly strained her abdominal muscles.

passive movements increase and strengthen all these muscles as active movements do voluntary muscles?

To this let there be added the augmentation of capillary, venous, and lymphatic circulation, and it is further evident that the adhesions and bands which exist between the uterus and bladder in a case of ordinary prolapsus uteri must be distended and destroyed when the uterus is replaced.

These manœuvres constitute the "Brandt Treatment" of uterine massage for prolapsus. The local treatment is advantageously seconded by Swedish medical gymnastic movements prescribed for the particular condition of each patient. The number of these movements is very great, each one being designed to meet a special indication with reference to its physiological effect; the movements are active, passive, or mixed, according to the requirements of the case, and are given by competent Swedish masseurs educated at the Royal Central Institute of Stockholm.

The Central Institute of Stockholm is under the control of physicians, and the students receive good preliminary instruction in physiology and anatomy while treating hundreds of patients every day by massage and gymnastic exercises, under the care of competent directors.

The graduates of this school should not be confounded with bath rubbers and other manipulators calling themselves Swedish masseurs.

The duration of treatment for the cure of prolapsus uteri varies from four to eight weeks, depending upon the chronicity of the case. The prognosis is naturally less favorable in old chronic cases where the perineum is not complete, where pessaries have been worn until the vagina is dilated and atrophied, and where the general condition of the whole system is anemic and debilitated.

It is not probable that any cure could be effected where there was much loss of the perineum, without resorting to surgery first to repair the injured pelvic floor.

During the continuance of treatment the patient herself must avoid making any exertion, climbing stairs, doing heavy work, etc.—in fact, absolute rest is essential during the first few days.

The contra-indications for treatment are: pregnancy, highly resisting para- and perimetritic adhesions, fixations of the ovaries, acute inflammations of the uterus and its adnexa.

Massage of the uterus is based upon purely physiological laws. Its aim is to completely re-establish the normal conditions by (1) restoring tonicity to the muscles; by (2) stretching and destroying the abnormal adhesions which, in a case of prolapsus uteri accompanied with retroflexion of the fundus, always exist between the uterus and bladder; (3) by giving the

uterus support from the pelvic floor through stimulation and contraction of the levator ani, perineal muscles, fascia, and aponeurosis.

When the uterus is removed from its malposition, the circulation of the blood is re-established in the pelvis and the organ can thus return to its normal condition.

2. NAGEL, W.: THE ANATOMY OF THE HUMAN OVARY (*Arch. f. Gyn.*, xxxvii., 3).—It is erroneous to consider an increase in the visible follicles as a pathological event; it is a distinctly physiological condition. Atresie of the Graafian follicles may occasionally occur in perfectly normal ovaries; the increase of the stroma is the most important occurrence. N. contends that no diseased condition of the ovary occurs which may rightly be termed "miliary cystic follicular degeneration," and states that when an ovary is found essentially enlarged with numerous tensely filled cysts from the size of a lentil to that of a bean, it will be more nearly correct to consider such as normal Graafian follicles in various phases of development; obliteration of the follicles of great extent follows as a sequela of chronic interstitial inflammation of old date, but this causes diminution in the number of the follicles, and could scarcely be confused with the above-described condition. The formation of genuine cysts is accompanied by such striking alterations in the entire ovary, and the cysts themselves present such characteristic features, that they can also be readily distinguished from Graafian follicles. The most usual error is that of mistaking a beginning cystoma during two stages of its development: 1. Just at the beginning, when the depressions in the germinal epithelium agglutinate at any one spot, and isolated small cysts form close beneath the surface of the ovary as a result of stasis. 2. At a later stage, when a large part of the ovarian tissue has been invaded by the epithelial new-formation, without there having occurred the formation of large cavities. The microscopic examination will at once clear up the difference—the cavities of the suspected epithelial new-growths are lined with a single layer of cuboid cells provided at their free extremities with an opening or branchlets; they contain a thickly-fluid matter (colloid) and no definite walls; they are in frequent connection with one another, and form a network of epithelial canals which have no resemblance whatever to Graafian follicles.

L. R.

3. SCHMITT, ADOLPH: ON THE RECOGNITION OF GONORRHEA OF THE TUBES (*Arch. f. Gyn.*, xxxv., 1).—As regards the nature of transportation of the infection over a mucous surface, a simultaneous and uniform diffusion of the contagious matter occurs only in the conjunctiva; in other situations, where no such action as the propulsive movements of the eyelids can

occur, the progression takes place gradually, so that while one area may be in an active inflammatory state another may be undergoing a process of repair. On the other hand, a reinvasion may ensue in recently recovered parts, that is, when the newly formed epithelial layer cannot withstand the fierce attack of the emigrating round cells. It appears that obstacles occasionally occur to the extension of the gonorrheal process over the entire mucous surface by intervening anatomical parts, as the internal os and the uterine openings of the tubes; when favorable predisposing causes—irritations of all kinds, excesses in venery and wine—permit the overcoming of such barriers, the process proceeds beyond them in the same manner as in the original site. Orthmann found that in purulent salpingitis the superficial epithelium almost entirely disappeared; purulent fusion and circumscribed necrosis produce almost complete destruction of the mucous membrane; the tube wall is greatly thickened, especially the intermuscular connective tissue, the musculature being unaltered or atrophied; the puerperium and especially gonorrhea are etiological factors. Orthmann, however, failed to find gonococci in the secretion of numerous specimens. S. has examined a large number of specimens of gonorrheal inflammation of the tubes, and states that the course of the disease is essentially the same as that taking place in other mucous surfaces. An important difference, however, exists in that, while the abundantly produced pus has uninterrupted outflow from other mucous regions, the purulent discharge from the tubes is hindered, on the one side by the greatly narrowed ostium uterinum, on the other by the very frequently closed ostium abdominale—complete factors for the production of pyosalpinx; the latter is a frequent sequela of purulent salpingitis. The effects of the pressure of the contents of the sealed tube are injuries and changes in the mucous membrane, which of course are wanting in other mucosæ, but which must be recognized in studying the anatomical appearances. If the closure of the ostium abdominale be not very firm, especially with the occurrence of violent irritation, a certain quantity of the pus may overflow into the abdominal cavity and there set up the serious complications of gonorrhea. The main purpose of S.'s investigations was to find the gonococci in the tissues of the tubes the secretions of which had been found to contain these bodies. He did not succeed in positively demonstrating their existence in these parts; he thinks that the process of healing had already advanced so far in the tissues that the gonococci had been destroyed, while they still existed, although in diminished numbers, in the free secretions. The so-called "mastzellen" of Ehrlich will often simulate cells containing gonococci, and their occurrence will be confusing

from the great similarity which frequently exists between the two.

The special diagnosis of disease of the tubes is very difficult, even impossible, so long as only a simple inflammation of the tubal mucous membrane exists without the formation of cysts. The author made use of 116 cases of gonorrhea in the female; in 27 the symptoms pointed to secondary inflammation of the pelvic organs. He only utilized cases in which the gonococci were positively demonstrated in the secretion, and those in which other complications which could excite fever or symptoms of inflammation were wanting. In 27 of the cases symptoms appeared showing an extension of the gonorrhea to the uterus and its attachments. The majority of these cases were engaged in public or private prostitution, and the predisposition for the extension of the infection to the tubes was therefore greater than in the average cases. The propagation of the poison from the time of infection occupied a varying period, but in general could be said to take place within the first two months. The author cannot accept Fritsch's explanation for the occurrence of gonorrheal perimetritis, *i.e.*, that the gonococci traverse the lymphatics and so set up inflammation, but thinks it more likely that the occurrence of perimetritis takes place: 1. The inflammation is caused by the extension by continuity of the virulent catarrh through the tube walls. 2. The overflow of the gonorrheal pus into the abdominal cavity. But S. believes that the inflammation which follows is not a consequence of inoculation by the pus, but a simple inflammation caused by the irritation of the matter. The presence of gonococci in the pus has therefore no influence on the causation of perimetritis; whether ptomaines developed in the gonococci are the cause is not yet known. L. R.

4. NAGEL, W.: THE ORIGIN OF THE AMNIOTIC FLUID (*Arch. f. Gyn.*, xxxv., 1).—Despite the industrious researches in this matter, opinions are now at greater variance than ever. Gusserow bespoke favorably the theory of Portal that the fetus possesses the property during intra-uterine life of elaborating a urinary secretion and excretion. The conversion of benzoic acid into hippuric acid was considered sufficient proof of the functional activity of the fetal kidneys, but this procedure of Gusserow is open to the possibility, as stated by Ahlfeld, that the conversion of benzoic acid into hippuric acid was accomplished by the placenta; although Dührssen found in six cases that the placenta contained benzoic acid and no hippuric acid. It lies in the nature of things that the investigations of various authors embrace only the behavior of the fetal kidneys during the last days and hours of pregnancy, and the conclusions to be drawn from such procedures are by no

means satisfactory. That the kidneys may play a very insignificant rôle during intra-uterine life is proven by Ahlfeld from the fact that, in cases where both organs are wanting, the fetus develops uninterruptedly to the end of gestation, without the developmental anomalies going beyond their local domain. The amniotic fluid present in such cases cannot, of course, originate in the fetus, but it is not quite tenable to conclude that the functional activity of the kidneys under normal circumstances is unnecessary to the origin of the amniotic fluid. Nature compensates for many profound anomalies of development. It is important to subject the urinary organs—that is, the primitive and permanent kidneys—to a closer scrutiny during their first development; the researches have heretofore only taken in the condition of these organs during the latter part of pregnancy. The majority of authorities are inclined to the opinion that in the first part of pregnancy, before the development of the placenta, the amniotic fluid originates by transudation from the maternal vessels; it has hitherto been impossible to demonstrate urea in the amniotic fluid of the first months.

The author suggests another source for the amniotic fluid—the Wolffian bodies; the latter present, during their entire existence as independent organs, the anatomical characteristics of secreting organs in full activity, justifying us in considering them as important elements in embryonal nutrition. The author then discusses at some length the anatomy of the Wolffian bodies, and illustrates his investigations with several fine plates. He concludes that at the beginning the permanent kidneys possess great similarity, in the formation of their glomeruli and the simple characteristics of the urinary tubes, to the Wolffian bodies, and that they suffice in this form to supply all the demands of metabolism at this stage of pregnancy; the human kidney is, therefore, capable of functioning in the second month of gestation, and the same applies, says Nagel, to the Wolffian bodies at a previous stage. He states that the amniotic fluid, even in the beginning of pregnancy, is in part a product of embryonal metabolism. Beginning with the subinvolution of the Wolffian bodies, the kidneys gradually assume the function of the former; for a time, before the primitive kidney has disappeared, both the provisional and the permanent organs functionate synchronously, so that the renal activity is not suddenly assumed by the kidney; before the sphincter vesicæ is so far developed as to permit the existence of a urinary bladder, the secreted urine at once flows off into the amniotic fluid.

L. R.

5. DOHRN: THE MECHANISM OF RESPIRATION IN THE NEW-BORN (*Arch. f. Gyn.*, xxxv., 3; *Verhandlung d. III. Versamm-*

lung der Deutsche Gesel. f. Gyn., 1889).—Although the author's subject was a purely physiological one, it possessed several practical features. He spoke particularly in reference to the change of form of the lungs during respiration and the movements of the thorax. The elevation in the thorax begins at the upper part and progresses downward; the respiration is essentially thoracic, and the base of the thorax is raised to the greatest extent. To determine the quantity of the interchange of air taking place the first days after birth, D. fastened to a mask covering the mouth and nose of the child a spirometer, which showed the slightest grades of respiratory activity, and found during quiet breathing 35 c.c. of air, during the act of crying 120–140 c.c. The interchange of air is therefore very much greater in the new-born than in the adult; on the first day it is still moderate; it then increases to the third day, and, after another short diminution, to the end of the first week, when it comprises one-third of the entire vital capacity of the lungs. In a medico-legal aspect these facts are of importance as showing that it is not until the second or third day after birth that the air cells become completely dilated, that therefore occasional areas of atelectasis exist during the first day, notwithstanding that the child may have breathed sufficiently.

L. R.

6. WERTH: TUBAL TUBERCULOSIS (*Arch. f. Gyn.*, xxxv., 3). There are two forms: 1. The tubal mucous membrane is destroyed by cheesy degeneration; the contents of the tubes are cheesy and copious, and rich in bacilli. 2. The tubal mucous membrane is in a state of chronic inflammation; the walls of the tubes are thickened, more by increase in connective tissue than by augmentation of the muscular portion; tubercles exist in the mucous membrane, rich in giant cells, bacilli very sparse; as a whole, there is only moderate tendency to caseation. The author operated upon three cases belonging here. In the first case there existed tuberculosis of the second described variety; the tube was removed; neither in its contents nor walls could bacilli be detected, but there were numerous giant cells. In the second and third cases the tubes were also removed; in one, tuberculosis could be positively demonstrated; in the other, pyo-salpinx; bacilli were wanting. Attempts at inoculation with the tubal contents proved ineffectual. The prognosis in these cases is puzzling. In general, removal of tubes so diseased is justifiable; if complicated with tubercular peritonitis with ascites, the tubes, if not enlarged and causing no suffering, should not be removed, but the fluid should be evacuated from the abdominal cavity by incision, even though a residuum may be left; after this procedure absorption takes place.

L. R.

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ORIGINAL COMMUNICATIONS.

THE UTERO-VAGINAL ANGLE AND ITS INFLUENCE ON
THE MECHANISM OF LABOR.¹

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(With nine woodcuts.)

For many years obstetricians have accepted as correct the statement made by Naegele—who, in turn, based his opinions on the writings of Vesalius, Levret, and Smellie—that in the mechanism of labor the child, in its passage from the uterus, traversed a curved canal, meeting with no resistance other than would naturally be present in an undilated canal.

The axis of the bony pelvis is the union of the axes of the inlet, cavity, and outlet, and is represented by a curve or an arc of a circle. Obstetricians have taught that the soft parts in the floor of the pelvis formed, in labor, a continuation of

¹ Read at the annual meeting of the Vermont State Medical Society, October 9th, 1890.

this curve, carrying it on beyond the bony pelvis; Carus even going so far as to assert that a pair of compasses, with one leg placed on the symphysis pubis of a bisected pelvis, the other in the axis of the superior strait, would sweep around a circle one-half of which would represent the axis of the pelvis. Others modify this curve somewhat, and say that it is represented by the curve of an irregular parabola. The investigations of Fabbri, Sabbatier, Boissard, and Varnier show these theories to be incorrect, and I trust that I may be able to demonstrate to you the fact that the axis of the parturient canal, instead of being curved, is made up from two straight

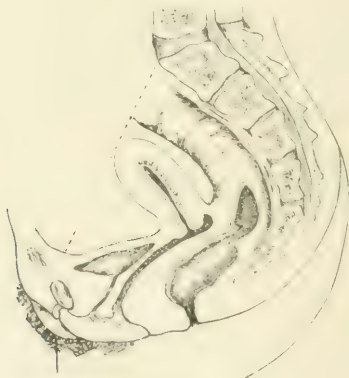


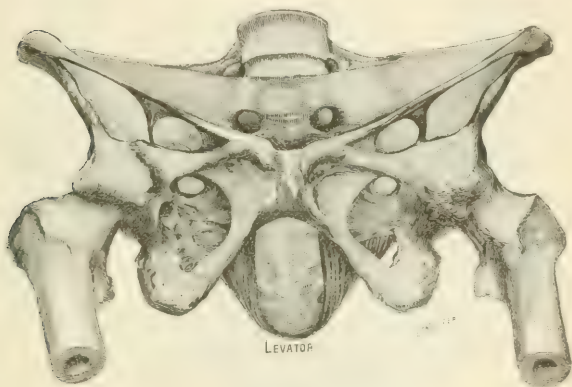
FIG. 14

axes crossing each other at an angle of about 95° . This angle we will call the Utero-Vaginal Angle. Parvin quotes Varnier as speaking of it as the "angle of entrance and exit," but I prefer to use the term "utero-vaginal," as it needs no explanation.

How is this angle formed? The axis of the uterus at term is represented by a line drawn from a point midway between the umbilicus and the ensiform cartilage to the middle of the coccyx. The axis of the vagina is represented by a line

¹ From Mundé's "Minor Surg. Gyn.," 2d Ed.

drawn from the upper portion of the orifice of the vagina to the lower part of the third sacral vertebra. These lines cross, at an angle of about 95° , at a point on the floor of the pelvis a little above (in the line of the uterine axis) the tip of the coccyx. The uterus and vagina together form a muscular tube having a blind upper extremity, and bent on itself in such a way that it might be likened to an elbow in a stove pipe. (See Fig. 1.) This bend forms the utero-vaginal angle, and performs, as we shall see, a very important part in the mechanism of labor.

FIG. 2.¹

Before discussing the mechanism of labor let us glance at the anatomy of the floor of the pelvis, which is composed of muscles, fascia, connective tissue, blood vessels, nerves, etc., and is in reality the bottom of the pelvic basin. The most important structure in the pelvic floor, and the only one we will examine, is the levator ani muscle, which "arises in front from the posterior surface of the body and ramus of the pubes on the outer side of the symphysis, posteriorly from the inner surface of the spine of the ischium, and between these two points, from the angle of division between the ob-

¹ Dickinson, AM. JOUR. OBSTET., 1889.

turator and vesico-rectal layers of the pelvic fascia at their lowest part. The fibres pass downward to the middle line of the floor of the pelvis, and are inserted, the most posterior fibres into the sides of the apex of the coccyx, those placed more anteriorly unite with the muscle of the opposite side in a median fibrous raphé which extends between the coccyx and the margin of the anus. The middle fibres, which form the larger portion of the muscle, are inserted into the sides of the rectum, blending with the fibres of the sphincter muscles,



FIG. 2

and the anterior fibres become blended with the longitudinal fibres of the vagina and with the external sphincter and transversus perinei muscles." It is reinforced by the other perineal muscles and by the strong pelvic fascia.

It must readily be seen, from this description of the origin and insertion of the muscle, that, when united with its fellow of the opposite side, a horseshoe-shaped trough or gutter is made (see Fig. 2), and that the sides of this gutter, being smooth, would naturally tend to carry any object impinging

¹ Dickinson, loc. cit

on them to the lowest point of junction, which is in the median line ; and as the bottom of this trough slopes anteriorly, the object would be carried on toward the vaginal orifice in exactly the same way that water runs off a roof into the eaves-trough, thence to the ground. (See Fig. 3.)

Bearing in mind that the axis of the uterus crosses the axis of the vagina at an angle of about 95° , let us consider the mechanism of labor, taking first the occipito-anterior positions. First there is flexion, then descent of the head through the pelvis *in a straight line* (following the line of the axis of



FIG. 1.

the uterus) until it reaches the side of the trough at the floor of the pelvis ; then it begins to rotate from the oblique diameter in which it started to the antero-posterior diameter. When the head reaches the bottom of the trough it has fully rotated—*i.e.*, the occipito-frontal diameter of the head corresponds with the antero-posterior diameter of the pelvic trough—and, being at the extreme end of the uterine canal, can of course go no further *until* extension begins. Why ? The head, being at the lower extremity of the uterine canal, can go no further in that direction ; but on the anterior side

of this extremity is the vaginal canal, placed, as has already been stated, at an angle of about 95° with the uterine canal. In other words, the head is at the utero-vaginal angle, which it can pass only by extension, and that is accomplished in the following manner: The uterine contractions are constantly crowding the child down into the pelvic groove, the pressure being exerted through the spine to its junction with the head. The result of this crowding down must be that the head will either be extended or further flexed. It cannot be further flexed, because the chin already rests on the sternum; consequently it must be, and is, extended, and in this way: The head is now in the hollow of the sacrum and fully flexed on the body. Its progress is barred in every direction save one, viz., the opening into the vaginal canal. Pressure from above tends to force the occiput in the direction where there is least resistance; the head glides over the smooth surface of the sacrum, and extension begins. (See Fig. 4.) This allows the body to descend a little, which pushes the occiput still further into the vaginal canal, thereby increasing the extension. This process continuing, more and more of the head is forced around the angle, until the occiput emerges from the vaginal orifice under the pubes, when it is immediately followed by the forehead, nose, and chin. Meanwhile, a shoulder being forced down against the side of the groove causes the body to rotate, the shoulders are pushed around the angle, the body is bent laterally, and the shoulders are delivered in precisely the same manner that the head was, *i.e.*, by being bent around the angle and under the pubes. The hips follow the same course, and, being smaller, are easily forced through the now greatly dilated canal.

In occipito-posterior cases, when anterior rotation does not occur, labor is much more difficult—not, as we have been taught, because it takes the occiput so much longer to sweep over the perineum, but because it is extremely difficult for an already flexed head to be further flexed so that it may pass the utero-vaginal angle.

The head in occipito-posterior positions, when it reaches the extremity of the uterine canal, is flexed on the body; and as pressure is exerted through the spine in the same manner as in occipito-anterior positions, the tendency is to do one of

two things: either to begin extension by crowding the face into the vaginal opening, thus converting it into a face presentation, or to still further flex the head on the body. In the latter case it takes so long to turn the angle that the head is moulded so that it may be adapted to the canal; and even then, unless the back bends a little, it is doubtful if it can be delivered unassisted. But the back bends a little, the head passes the angle, and finally the parietal protuberances emerge from the vaginal orifice under the pubes, followed by the forehead, nose, and chin, and, as the text books say, "the head is extended over the perineum," while in reality it drops on to the perineum simply of its own weight. At the same time

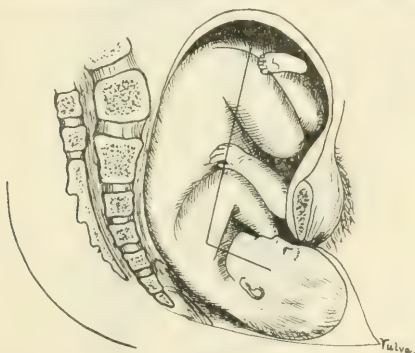


FIG. 5.

the shoulders come down and are delivered as in occipito-anterior cases. In occipito-posterior cases the perineum is enormously distended, because the head cannot be flexed to a right angle with the body, and an imperfectly bent object is being forced around the angle. (See Fig. 5.)

In face presentation, mento-anterior, there is extension, descent to the pelvic trough, rotation, and, in precisely the same manner as in occipito-anterior cases, the *face* is pushed into the vaginal canal, and *flexion* begins. (See Fig. 6.) The face is forced further and further into the vagina, increasing the flexion, until the chin emerges under the pubes, followed by nose, forehead, and occiput. Meanwhile the body descends, rotates, and is delivered as in occiput cases.

In mento-posterior cases, when anterior rotation of the chin does not occur, there is extension, descent, rotation, and further progress is impossible. Why? Because the head is fully extended on the body, and when it reaches the extremity of the uterine canal it cannot be further extended so as to allow it to pass the utero-vaginal angle. The body cannot be bent backward sufficiently to allow the head to pass the angle, therefore labor is arrested—not because the neck is $1\frac{1}{2}$ inches long and the chord of the sacro-coccygeal curve is $4\frac{1}{2}$ inches long, nor because the sternum impinges on the sacral

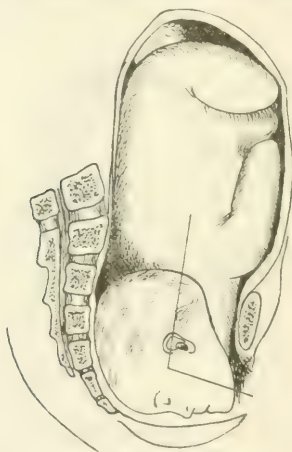


FIG. 6.

promontory, but it is arrested because a fully extended head cannot be further extended, therefore there is no more possibility of forcing the face around the angle into the vagina than there is of forcing a stiff straight stick through the elbow of a stove pipe. (See Fig. 7.)

In breech cases the same forces are at work in the same manner as in head cases. The breech is forced straight down to the floor of the pelvis, rotation occurs, the hips are gradually forced around the utero-vaginal angle, the body is bent laterally, the shoulders rotate and pass the angle while the neck is bent, the head rotates, turns the angle by flexion, and

the child is born. When the after-coming occiput rotates posteriorly, the head may be delivered either by extension or flexion, as the case may be. In either case the uterine contractions cause the head to glide over the smooth surface of the sacrum, the head and sacrum resembling, for the time being, a ball-and-socket joint. Proof that the child passes through an angular instead of a circular canal is found in the fact that in breech cases, when the legs are extended over the abdomen, labor is greatly delayed for the reason that the

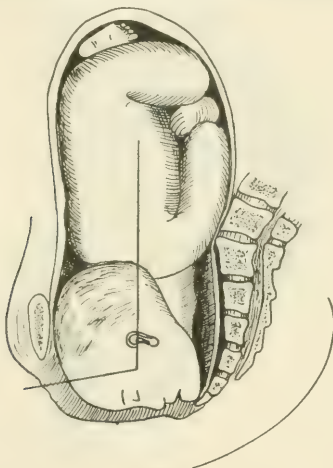


FIG. 7.

legs cannot be bent laterally, consequently there is much greater difficulty in bending the body laterally sufficiently to allow it to pass the angle, the legs acting somewhat as a splint.

In King's "Manual of Obstetrics" is a cut showing an arrested spontaneous evolution, in a transverse presentation, which beautifully illustrates the utero-vaginal angle. In such a case it would, of course, be impossible to deliver the child. (See Fig. 8.)

I shall not speak of the management of labor, as that

remains unchanged; but several questions have suggested themselves to my mind, to which I should like to direct your attention: First: In a forceps delivery, when the head is at the superior strait we should make traction in the line of the axis of the uterus until the pelvic floor is reached, this being done by grasping the shank of the forceps with the left hand at the vaginal orifice, while the right grasps the ends of the handles and lifts them up, thus making the right hand the power and the left hand the fulcrum, the child's head being

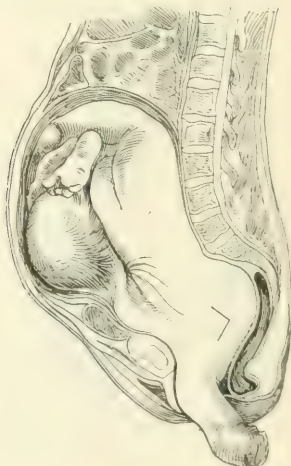


FIG. 8.

the resistance, as described by Pajot. In this way no power is lost; while if we make traction in the direction of the curve of the sacrum, power is lost, as the child's head will, to a certain extent, impinge on the pubes. As soon as the head reaches the utero-vaginal angle, traction should be made in the direction of the vaginal axis.

Second: Is not the birth of the child through the anus (a most unfortunate and distressing accident that has sometimes happened) rather strong proof that there is an angle in the canal, and that the uterine contractions were so strong that

the head had not sufficient time to pass the angle and was forced in a nearly straight line through the soft parts?

Third: Is not the fact that, when the head has reached the floor of the pelvis, the pains increase in severity, the head advancing with a pain and receding upon its cessation—extending and flexing, gliding over the smooth sacrum—evidence against a curved-canal theory? For if the canal were circular there would be no arrest of progress, any more than there is in the rectum. The apparent curving of the vaginal canal is simply the distention of the perineum to adapt it to the contour of the child's head.

Fourth: When the head is about to emerge from the vaginal orifice, the lower part of the woman's abdomen is much more prominent than at any previous time, because the head and body are at right angles with each other, the head being extended or flexed as the case may be; and if the case be occipito-anterior, the child's face may be felt through the perineum.

The question might be raised that it is impossible for the head to be delivered by simple extension or flexion, as the neck is not long enough to reach from the utero-vaginal angle to the vaginal orifice. This can be answered by giving the length of this portion of the canal, which in the parturient woman measures from one to one and one-half inches.

Do the bones of the pelvis exert the influence on the mechanism of labor that they are credited with? This question may seem entirely uncalled for, but let us consider a moment. The pelvis is a bony ring supporting the trunk, and in turn supported by the legs. It is shaped to give strength and elasticity to the entire body, and to accommodate, in the female, the uterus and its appendages, the rectum, and the bladder. That it exerts but slight influence on the mechanism of labor is shown by the thickening of the interarticular fibro-cartilage and the movability of the pelvic articulations, so that when the child descends the bones may be separated a little, or, in other words, that they may, to a certain extent, be pushed out of the way. The hollow of the sacrum does not cause the head to advance toward the vaginal outlet, for the reason that the shape of the head corresponds to the shape of the anterior surface of the sacrum, and when the head

reaches the floor of the pelvis it fits into the sacrum, exactly as the head of the femur fits into the acetabulum: and the sacrum, like the acetabulum, furnishes a smooth socket in which the head moves, governed by the uterus above and the utero-vaginal angle below.

To sum up in a few words my theory of the mechanism of labor: The head starts in the oblique diameter of the pelvis, descends in a straight line through the uterine axis to the floor of the pelvis, where it comes in contact with the levator ani muscle trough and rotates into the antero-posterior diame-

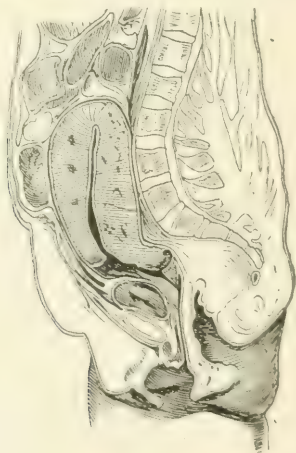


Fig. 9

ter. When it reaches the bottom of the trough it stops, as it can go no further in that direction. Then extension begins: the occiput is forced around the utero-vaginal angle until the head is fully extended, by which time the occiput emerges under the pubes, and immediately afterwards the head is delivered. Meanwhile the shoulders come down, rotate, are forced around the angle, the body is bent laterally, and the shoulders are delivered; and in the same manner the hips are delivered.

After delivery of the placenta the parts resume their for-

mer relations, and, with the exception of the enlarged uterus, appear as they did before pregnancy. (See Fig. 9.)

In the preparation of this paper I consulted the works of King, Lusk, Playfair, Parvin, Skene, Dickinson, Thorburn, and Gray, and wish at this time to make acknowledgment of the fact.

ON THE PROPER METHOD OF APPLYING THE OBSTETRIC FORCEPS.¹

BY

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Washington, D. C.

OF surgical operations pertaining strictly to the practice of obstetrics, none equals in importance the artificial termination of labor by the forceps. Compared with others, its performance is more frequently demanded, and the result, often depending upon the skill with which the instrument is used, involves the life of mother and offspring. As a consequence of more frequent employment, we witness the diminished percentage of maternal and fetal death rate, and the more rare performance of graver operations. Suffering, immediate and remote, is relieved. It removes the unnecessary pain of protracted labor, and with it its attendant dangers; while the remote evil of destruction of the soft parts by sloughing, once so common, is now seldom seen.

With all this, and more that might be said in its favor, there is still no operation I could suggest for your consideration that is so unsettled as to the manner of its performance. Indeed, scarcely any obstetric subject could be brought up for discussion in a medical society that would evoke the expression of such diametrically opposite opinions as, Which is the proper method of applying the forceps—in relation to the diameters of the child's head or to those of the mother's pelvis?

The subject is one of importance to decide. We should

¹ Read before the Washington Obstetrical and Gynecological Society. February 21st, 1890.

lay aside our prejudices against one or other method, and test both; compare the merits and demerits of each, theoretically and practically, and not condemn one simply because we have been accustomed to follow the other and are satisfied with the result. The only result that should satisfy one is the best attainable. Have we reached that?

Few statistics¹ have been published giving the comparative maternal and fetal death rate between normal labors and those terminated by forceps, yet no one will doubt that it is greater to both in instrumental labors. Excluding all other causes that may contribute to death, there will remain a higher mortality attributable to the use of the instrument *per se*.

The chief element of danger to the child is fatal compression of the head; to the mother, it is septic infection. Unclean instruments and fingers, and the presence of decomposed fluids in the genital canal, furnish the fire, while traumatism opens the avenues of the mother's system to the spread of combustion.

Asepsis is the remedy for one; the method of operating is the remedy for the other. If we can demonstrate by employment of certain rules of operating that less force is required to deliver the child, that less traumatism results to the mother, that fewer mothers and fewer children die, then the best attainable result will be reached. These rules may not be such as to bind one to the employment of an exclusive method, but they may govern us in the selection of the method indicated by the conditions which exist.

Hoping to take a step in formulating these rules, I corresponded with and obtained the views of eighty-two prominent physicians living in different parts of the United States, and at the last meeting of the American Medical Association I

¹ In the American Journal of Medical Science, January, 1890, p. 101, is published an extract of a study, by Münchmeyer, of 206 forceps applications in the Dresden Clinic. The maternal mortality was 3.4 per cent, but in no case was death attributable to the use of the instrument alone; 57.7 per cent suffered extensive lacerations of the genital canal, 21.8 per cent had high fever, 9.7 per cent had mild fever, and 3.4 per cent had perceptible parametritis; 17 per cent of the children died, and 12 per cent were fatally injured by the forceps. Of the 19 children delivered by high forceps operation, 5 (26 per cent) perished, and others had suffered severe lacerations.

presented a paper¹ on the subject of forceps application to the section of Obstetrics and Diseases of Women. Twenty-three States are represented by these replies, and the crystallization of the opinions may serve to form a basis for future work.

Fifty-one per cent of the operators stated they applied the blades of the forceps to the sides of the child's head. Among these may be mentioned the names of Lusk, Parvin, Goodell, Edward Warren Sawyer, W. H. Wathen, Robert Battey, Virgil O. Hardon, De Laskie Miller, R. Beverly Cole, Barton C. Hirst, Cornelius Kollock, E. L. Partridge, Matthew D. Mann, E. P. Reynolds, Eugene C. Gehrung, and Geo. J. Engelmann. Thirty-five per cent disregarded the position of the child's head and applied the blades to the sides of the mother's pelvis. The advocates of this method include the names of W. M. Polk, Paul F. Mundé, E. H. Grandin, A. F. Currier, Robert Glisan, J. H. Carstens, C. A. von Ramdohr, H. C. Coe, A. F. A. King, Jos. Kucher, Charles Warrington Earle, and C. C. P. Clark. Finally, eleven per cent recognized no rule and followed either method.

Individual answers to these letters express greater differences of opinion. One correspondent says the forceps was made to fit the sides of the child's head; he had no difficulty in applying them after such manner, and would never do differently. Another replied the forceps was made with reference to the pelvic cavity, and to deviate is to injure. Still another answers that he always adjusts the blades to the sides of the head—never otherwise, whether at the brim or in the cavity; and an opponent states that it is impossible to apply the instrument otherwise than to the sides of the pelvis. These views merely represent the unsettled state of the question, and to bring chaos out of confusion I have divided the methods practised by all into the three classes mentioned.

The comparative frequency of the two principal methods of applying the forceps, presented by the foregoing figures, probably does not correctly represent the practice in this country. This result was arrived at by answers obtained from the teachers of obstetrics and prominent men in this line of prac-

¹ "The Application of Forceps to Transverse and Oblique Positions of the Head," Journ. Am. Med. Assoc., November 9th, 1889.

tice, whereas investigations made among general practitioners would likely reverse the figures and show a majority in favor of the method of applying the blades to the sides of the pelvis. Some operators who advocate one or other of these methods are emphatic in their belief of its advantages, and always adopt it; others prefer it and follow the practice when they can (admitting that, at times, it is impossible to do so); and some are guided in the manner of operating by the position of the head in the pelvis. For instance, when the head is at the brim some operators, who usually prefer to apply the instrument to the biparietal diameter of the head, abandon that method and adapt the blades to the sides of the mother's pelvis; while others, who make it a rule to operate with the blades applied laterally, under these circumstances attempt to apply them to the sides of the head.

The reasons for these changes are evident.

They who recognize the merits of the first method change to the second because it is difficult, and in some cases impossible, to adjust the blades to the sides of the head when situated at the inlet. The others, preferring the second method, attempt, under these conditions, to adjust the blades to the biparietal diameter of the head because it is more dangerous to the child to insert them laterally and grasp the occipitofrontal diameter. Some employ special forceps for these cases. I had made, and employed successfully on several occasions, a forceps with the pelvic curve on the flat surface. A description of this instrument, and the method of using it, has already been published.¹

At first sight it may seem odd that eminent men should hold such radically different views on this subject and advocate two methods of practice so contrary the one from the other, but there are several modifying circumstances to consider. Skilful operators who advise and practise the lateral application of the blades do not attempt to deliver the head by forcibly dragging it out, as is too often done by the less experienced. On the contrary, they consider the movements executed by the head during its passage, and in order to facilitate these the instrument is often removed and reapplied.

¹ "A New Obstetric Forceps," AMERICAN JOURNAL OF OBSTETRICS, November, 1889.

Therefore this method of inserting the blades does not relieve them of the necessity of making a diagnosis of the position of the head. It is incumbent upon them to know in which diameter the head is grasped, and whether forward rotation of the occiput within the blades follows the efforts to extract it. The argument, so often advanced by its advocates, that the lateral application of the blades simplifies the operation, is not true, except when improperly executed.

Another most important point, and one to which too little attention is paid, pertains to the instrument itself. Operators who practise one method should employ a different kind of instrument from those who follow the other. One says "the forceps was made to fit the sides of the child's head," and another, "the forceps was made with reference to the pelvic cavity." Both are right. The Simpson forceps, and those patterned after it, is made with reference to the pelvic cavity. It possesses little compressive power, and is the proper instrument to use when the position of the child's head is disregarded. The comparatively large cephalic curve offers less resistance to the rotation of the head when embraced by the blades. The Hodge and similar instruments are strong compressors, and the cephalic curve of the blades is made to fit the sides of the child's head. This class of instrument is most popular with the profession in this country, and doubtless many a child's life is sacrificed by its improper application. The Hodge type of forceps measures about half an inch between the tips and two and one-half inches between the widest part of the blades; the Simpson type one inch and three and one-half inches respectively.

A prudent operator, who favors the application of the blades to the sides of the head and employs a Hodge, will, when occasion demands the blades inserted at the sides of the pelvis, discard this instrument and use a forceps which has less compressive power.

Prof. Goodell states, in his reply to my circular letter: "I try always to apply the blades of the forceps to the sides of the child's head, no matter where it may be, whether at the brim or in the excavation, whether lying obliquely or transversely. . . . Whenever, in a difficult labor, I cannot adjust them to the sides of the child's head, for which they are

especially adapted (Davis' forceps), I resort to a Simpson forceps, the blades of which are better adapted for seizing the head in its oblique or its occipito-frontal diameter."

Prof. Parvin says: "My 'custom' is to apply the forceps to the sides of the child's head, or as nearly as I can in this relation. . . . Inability to extract with the Davis, especially from failure of the occiput to rotate anteriorly, leads me to employ the Tarnier or Simpson, applied with reference to the sides of the mother's pelvis." Sound and judicious is this practice, but how different from that so often followed by general practitioners! Many do not make the effort, or do not possess the ability, to ascertain the position of the head in the pelvic cavity. The blades are inserted laterally into the pelvic canal, and seize the head with a "catch-as-you-please" sort of grasp, and its extraction is resolved into a question of physical force. The recent graduate of medicine in this country has little or no clinical instruction in operative obstetrics, and must be self-reliant. He recalls certain rules that were taught him—when to use the forceps; which hand holds the male and which the female blade, and which passes to the right and which to the left side of the mother's pelvis; he remembers how to adjust and lock them, and when and how to make traction. Beyond these and a few other rules he must be self-educated, and naturally falls into the easier method of inserting the blades and applies them laterally. To make matters worse, he may have selected, without advice, an instrument possessing strong compressive power.

During the early part of my practice I had occasion to apply the forceps to a primipara who had been in active labor for twelve hours, without making any appreciable progress beyond dilatation of the os. The head was engaged at the brim of the pelvis, and as I anticipated trouble I sent for assistance. I had succeeded in applying the forceps at the sides of the pelvis as the physician for whom I sent arrived. After forcible—very forcible—extractive efforts made by each of us, acting singly and conjointly, we finally dragged the head out transversely, with one blade over the occiput and the other over the brow. The perineum was torn and the child dead. The only fortunate circumstances in the case were, the mother recovered and the perineum was restored by immedi-

ate operation. In this instance the head was delayed at the brim by slight contraction of the conjugate, and occupied the transverse position with occiput to the left. The instrument employed was White's modification of Hodge, which, exerting strong compressive power and being applied to the occipito-frontal diameter, prevented forward rotation of the occiput. Without doubt the child's life was sacrificed to the unskilful use of forceps, and from this time I realized the importance of applying the blades to the sides of the head. I soon recognized that it was safer to the child, the grasp of the instrument was more secure, flexion and extension of the head were not interfered with, and rotation was more easily effected.

In 1870 Dr. C. C. P. Clark, of Oswego, N. Y., presented to the State Medical Society a communication¹ in which he strongly indorsed the application of the blades of the forceps to the sides of the mother's pelvis. Owing to the attention given this paper, and to the acceptance by many of the views he expressed, I wish to refer briefly to some of the arguments he employs to support his position. After quoting the rules laid down by the best authorities for applying the blades to the sides of the head, he pronounces them "entirely erroneous," and says he believes "that the presentation" (I suppose he means *position*) "is not of the slightest consequence." "If," he continues, "the received doctrine on this subject be an error, it is a very grave error and leads to very grave evils. The first of these is that it imposes upon the operator the necessity, as a preliminary step, of ascertaining the *presentation* [position?]. Even to the experienced practitioner this is not always easy."

In reply I would say the proper application of forceps always imposes upon the operator this necessity, and if he be incompetent to make out the position of the head he is incompetent to use the instrument properly. To follow blindly a rule to pass the blades to the sides of the mother's pelvis, to seize the head he knows not in what manner, and pull until it is extracted, without recognizing changes in the diameters of the fetal head during its passage, is simplifying the operation to a degree never dreamt of, even in the days of Chamber

¹ Trans. N. Y. State Med. Soc., 1870, pp. 249-272.

lain. I admit that many practitioners do apply the forceps to the head when ignorant of its position, and apply it many times successfully, but their result in the long run cannot equal that of the operator who uses the instrument intelligently.

"A far greater evil," the writer continues, "is that this doctrine necessarily makes the rules to be followed exceedingly complex, for the modes of introducing and applying the forceps must be as various as the *presentations*" (positions?). This argument holds good on paper; in practice it is not so complex. After the position of the head is ascertained, a little experience, aided by ordinary judgment, will teach how to insert the blades so that they are applied to the sides of the head with the concave edge towards the occiput.

After the instrument is applied according to this method, the subsequent steps are less complex than when the other rule is followed. The head is more free to execute the normal movements of flexion, extension, and rotation; and as the forceps rotates with the presenting part, the movements of the handle indicate the progress of delivery. Not so, however, when the blades are inserted laterally. Flexion and extension are prevented, and, as the head rotates within the blades, the movements of the handles do not furnish any indications, and the progress of labor must be ascertained by repeated digital examinations. It is frequently necessary, when following this method, to encourage rotation by removing and reapplying the instrument.

So that, I repeat, the argument often advanced that lateral application of the blades simplifies the operation is not true except when the operation is improperly executed. Dr. Clark says: "However the head may present, the law that should govern the position of the blades is one and the same. That law is that the pelvic curve of the forceps should follow and coincide with the utero-vaginal canal. For what purpose, let me ask, is the pelvic curve given to the long forceps, unless it is to accommodate the shape of the instrument to the anatomy of the mother?"

Let us in turn ask him, for what purpose is the cephalic curve given to a number of forceps, except to accommodate the shape of the instrument to the anatomy of the sides of the child's head? If they be made to fit the biparietal dia-

meter of the head, and certain advantages are justly claimed for this application, why apply them to the occipito-frontal diameter?

Dr. Clark is very punctilious in laying down rules to make the pelvic curve conform to the anatomy of the mother's parts, but ignores entirely the application of the cephalic curve to the child's. The cephalic and pelvic curves of forceps are at right angles, and cannot conform to the anatomy of mother and child at the same time, except when the biparietal diameter of the head is transverse. This occurs only at the outlet. "I assert," Dr. Clark continues, "that till the head is at the outlet of the pelvis it is substantially impossible to apply the blades in any other than the manner I have indicated," *i.e.*, to the sides of the pelvis.

This statement is entirely opposed to the experience of operators. In oblique positions of the head in the cavity, it is not only easy to accomplish, as a rule, but frequently when the blades are inserted laterally they adjust themselves obliquely and grasp the sides of the head. It is true, difficulties arise in high transverse applications, but one is scarcely prepared to accept Dr. Clark's assertion that "when a man describes the application of the blades of the forceps antero-posteriorly at the upper strait, he describes what is impossible."

To the many skilful obstetricians who succeed in inserting the blades in that manner he says: "When the greater part of the blade is buried out of sight in the pelvis, it is easy to be deceived with regard to the direction it is taking."

The writer seems to forget that the direction to which the lock looks and the position of the handles give infallible evidence of the position of the blades. Moreover, the impression of the blades upon the sides of the head is proof that the biparietal diameter was grasped.

Perhaps these are delusions also!

Finally, he says, "To other difficulties we add that their correct application presupposes that the practitioner can make himself sure of the *presentation* [position?], which for most of us is often difficult, and for many of us sometimes impossible."

The necessity of knowing the position of the head before applying the forceps intelligently has already been urged. Smellie recognized it nearly one hundred and fifty years ago,

and always 'sought to grasp the head by its sides. In a few cases only did he fail to grasp the sides of the head, and still more rare were his errors of diagnosis.

The practitioners of this generation possess in ether a great advantage. When the patient is brought fully under its influence, and, if necessary, with the whole hand of the operator inserted within the vagina, all doubts regarding the position of the head can be cleared up.

A recent contributor to a medical periodical,¹ reviewing the article on "Forceps" in the "American System of Obstetrics," says: "The clinical use of the forceps is entirely a different matter from the didactic theory of its application. This is quite a modern notion, and has followed largely from the increased attention attracted to the subject by the labors of Tarnier and others, and now depends on the simple theory that both the instrument and its application must favor traction, and without regard to the presenting part." This critic would have us believe that "Tarnier and others" who employ axis traction regard the delivery of the head through the pelvic canal in the same light that one views the withdrawal of a cork from a bottle neck. In other words, they have sacrificed to axis-traction principles those laws which govern the mechanism of the birth of the head.

Tarnier began his work at axis-traction forceps in 1877, and, we are told,² invented over thirty different instruments within two years. I have been unable to find anything in his writings to show that he had adopted the above-mentioned "modern notion." It is true, he advises that the blades should be applied to the sides of the pelvis when the head is movable above the superior strait, but he recommends something besides traction. After the head has been brought through the inlet he removes the instrument and leaves the case to nature, or transfers the blades to the sides of the head, or reapplies them according to the rules laid down for such application.

In a personal communication which I received from Dr. Paul Bar, of Paris, he says the practice of the accoucheurs of that city is to apply the blades of the forceps to the sides of the

¹ Am. Journ. Med. Science.

² Charpentier, "Cyclopedia of Obstetrics," Wm. Wood & Co., N. Y. 1887, p. 74.

head when transverse at the brim, and he kindly sent me the latest thesis on this subject, which was written by Dr. Lepage.¹

This author says the ideal method of extraction with forceps is to apply the instrument in such manner that during traction the fetal head is free to execute all the movements that would occur were the labor normal.

The proper application of the instrument, to attain this result, is :

1. To grasp the sides of the head with the blades ;
2. To make traction in the axis of the pelvic canal, and
3. To secure mobility of the head during its passage.

This last indication is most important, but has been overlooked. The great advantage of the Tarnier forceps is due to the traction being independent of the grasp of the handle, the head is absolutely free to perform movements of flexion and extension.

With these facts established, Dr. Lepage proves that the above advantages are secured by applying the Tarnier forceps to the sides of the child's head when at or above the superior strait.

He says it was during the year 1883 that Pinard first made his high applications after this method, and since the beginning of 1884 he has never employed them otherwise.

The thesis is concluded by the reports of 42 cases in which the blades were applied antero-posteriorly at the superior strait.

CONCLUSIONS.

1. Anesthetize the patient and place her in proper position—buttocks well over the edge of the bed, and each limb supported by an assistant.

2. Ascertain the position of the head, introducing within the vagina two or three fingers or, if necessary, the whole hand.

3. Apply the blades of a Hodge type of forceps to the sides of the head, with the concave edge directed towards the occiput.

If, for any reason, this cannot be accomplished, withdraw the instrument and substitute a Simpson, passing the blades

¹ "De l'Application du Forceps au Détoit supérieur," Paris, 1888.

to the sides of the pelvis. While making traction with this method, watch for anterior rotation of the occiput, and encourage it in some cases by reapplying the blades to better advantage.

4. Make every effort to secure aseptic conditions during the operation. The fingers, hands, and forearms of the operator, the external genitalia and vagina of the patient, the instrument and the hands of the assistants, should be clean and aseptic.

A NEW METHOD OF SURGICAL TREATMENT FOR CERTAIN FORMS OF RETRODISPLACEMENT OF THE UTERUS WITH ADHESIONS.

BY

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(With two woodcuts.)

THE treatment of malpositions of the uterus has been one of the most tedious and troublesome problems with which the profession has had to deal, and the ingenuity of those engaged in the special practice of gynecology has been taxed to the utmost in endeavors to devise some method of successfully overcoming these conditions without resorting to dangerous surgical means. Many and varied have been the methods, both medical and mechanical, that have from time to time occupied a prominent place in our text books and journals, and been eagerly grasped by physicians anxious to find some means of relieving their suffering patients from this most pernicious of local difficulties.

Until within the past ten years the accepted and, I may say, only method of treatment for any and all cases was mechanical, by some form of vaginal support; and the surgical methods of treatment for the relief of complicated displacements that have since been devised, as a direct outcome

of our advanced knowledge of abdominal surgery, would at that time have been considered impossible.

The credit for one of the greatest boons ever given to suffering humanity has been accorded to Mr. Tait, who, by his bold and successful invasion of the abdominal cavity, opened the eyes of the profession to the fact that what had long been considered an extraperitoneal pathological condition (a cellulitis), and treated with hot-water injections, iodine, and glycerin packs, was really not such, but an intraperitoneal disease, in many cases of a very grave nature. This knowledge opened up a new field for investigation, physiological, pathological, and, I must say, to a certain extent experimental. But from these combined investigations we are to-day in possession of certain facts respecting malpositions of the uterus which otherwise would have defied our skill, and we should yet be attempting to correct them with the sound, pessaries, tampons, etc., and still wondering why Dame Nature should rebel in such a vigorous manner occasionally.

Whether the result of accident, violence, or puerperal changes, we know that the uterus cannot long remain in a malposition without creating marked disturbance in the blood circulation of the pelvis, especially that of the venous system. The veins of the broad ligaments which have no lateral support are twisted and made tortuous by the downward displacement of the uterus: passive congestion at once supervenes; the veins are put upon the stretch and weakened. A little extra abuse is bestowed upon the uterus by a forced abortion, the careless use of the sound, exposure to cold, or violent sexual intercourse, and the passive congestion advances a step to the first stage of inflammation; nature attempts to relieve the pressure by osmosis of serum and lymph into the peritoneum, and the malposed uterus is soon firmly fixed in its abnormal position by bands of adhesion. It is not an uncommon thing for the laparatomist to see such displaced uteri, tubes, and ovaries covered over as with a veil by successive layers of organized lymph that will offer marked resistance to our efforts to break them up. It has been claimed by the advocates of mechanical treatment that packs, pessaries, massage, etc., will be all-sufficient for these conditions. It may possibly be due to my want of diagnostic

ability and manipulative skill in the management of such cases, but certain it is, that my experience in the management of long-standing cases of retrodisplacement of the uterus accompanied with a history of frequent attacks of pelvic pain and tenderness, will not allow me to concur in the above opinion, for I have found many cases where attempts to restore such uteri have only been attended with harm.

There is abundant clinical evidence to show that of all the various derangements of function which we meet with in the treatment of diseases of the uterus, by far the greater proportion of them are traceable to the existence of some form of displacement or to the secondary effects of those conditions. It is not my purpose to attempt to deal with simple displacements of the uterus that have been of short duration and unattended with any form of peri-uterine inflammation, but to call your attention to complicated displacements of long standing and the methods of treatment that have lately been resorted to for the relief of those which have defied the skill of the surgeon to relieve by any and all of the medicinal or mechanical methods at our disposal.

But I wish to exclude from consideration in this paper cases of malposition of the uterus complicated by such a diseased condition of the uterine appendages that their removal is unavoidable. The operation I am about to describe would be quite unnecessary under such circumstances. All authors agree that of the various displacements to which the uterus is subject, the backward or retro-displacement is much the most frequently met with and gives rise to the greatest amount of trouble. Both Mr. Tait and Graily Hewitt emphasize the opinion that it matters little whether it is a retroflexion or a retroversion, the condition is always pathological; and the cardinal rules for treatment laid down by the latter eminent author were, first, to attend to the patient's general health, and, secondly, to restore the uterus to its normal shape and position by the use of some form of vaginal pessary.

Many workers in this field of practice have found it impossible to always succeed in carrying out these directions. Pathological changes interposed a barrier above the vaginal vault, and peri-uterine adhesions would strenuously resist the coaxing pressure of a vaginal support, until, wearied with vain

efforts in this direction, the surgeon sought a more radical and rapid method of dealing with these pernicious cases by opening the abdomen and treating the condition from above. One of the first to do this was Koeberle, who in 1877 made laparotomy for retroflexion of the uterus, removed the healthy ovaries, and fastened their stumps to the abdominal wound. Mueller (see Kelly's article, *AMERICAN JOURNAL OF OBSTETRICS*, January, 1887) also made laparotomy upon two cases in 1877, but his operations were not for the relief of retroflexion or retroversion, but for prolapse of the uterus, and in these cases he removed the latter and fastened the vaginal stump to the abdominal wall. Olshausen also was one of the first to make laparotomy for retrodisplacement, and reported his cases before the fifty-ninth meeting of the Gynecological Section of the Naturalists' Society in Berlin (see Kelly's paper before quoted). So much has been written upon this subject during the past three years that I need not attempt a description of the various methods of operation that have been reported; but I do wish to give a short account of the first case of anterior fixation of the uterus for retroflexion that was performed in this country, so far as I am able to learn. The operator was Dr. T. G. Thomas, who made his first hysterorrhaphy more than ten years ago, and at that time he supposed the operation was entirely original with himself, although he did not publish his case. The operation as made at that time differed from the modern operation in this particular: Adhesions about the uterus were broken up and the latter brought forward against the abdominal walls; the peritoneum covering it was left intact, and the fixation accomplished in the following manner: the rectus muscle was drawn aside and a knitting needle passed through the subperitoneal tissue and peritoneum on one side of the abdominal incision, then through the fundus uteri, taking up about one inch of the tissue, but not penetrating deep enough to enter the uterine cavity; then the needle was returned through the peritoneum and subperitoneal tissue on the opposite side of the incision; the latter was then closed, and when this had been completed the needle wire was drawn tight and twisted, thus bringing the fundus of the uterus into close contact with the abdominal walls. The presence of the wire was suf-

ficient to excite plastic adhesions between the uterus and the abdominal walls. When sufficient time had elapsed to insure good union, the wire was cut with a pair of wire forceps (or nippers) and withdrawn. Since that time Dr. Thomas has modified his operation by denuding the peritoneum covering the fundus of the uterus, and fastening the latter by silk sutures brought directly through the abdominal walls. In no case has he cut the sutures short and allowed them to remain in the abdominal cavity to become encysted; neither does he recommend the latter method. He is a firm believer in the anterior fixation of the uterus by hysterorrhaphy, and in his hands the results have been good in the many operations he has made.

I might quote from the experience of many others in support of the opinion entertained by Dr. Thomas, but time will not permit. For a thorough digest of the subject I refer you to the excellent paper of Dr. Polk, read before the American Gynecological Society at Boston in 1889, to be found in the Transactions of that Society.¹ Dr. Howard A. Kelly, of Johns Hopkins Hospital, was the first to apply the name hysterorrhaphy to this method, and the report of his cases, in the *AMERICAN JOURNAL OF OBSTETRICS* for January, 1887, added new impetus to the operation in this country.

Although with the advance in the technique of laparotomy the operation of hysterorrhaphy has rapidly grown in the good graces of many of the special surgeons, it is not yet the favorite with the profession at large, for it is considered (and not without reason) too hazardous an operation to subject a patient to for the relief of retrodisplacement of the uterus. I wish to enroll myself as one of those not yet satisfied with the operation; not that I wish to depreciate in the least the good that has been accomplished with it, or that I deem it more dangerous than any other operation which necessitates the opening of the peritoneum, but, for reasons which I will

¹ Dr. Polk then advocated a somewhat similar method to that which I shall describe—that of freeing the adhesions, lifting the uterus, and, without denuding the peritoneum, fastening the two round ligaments together in front of the uterus by a single stitch. I did not have the pleasure of hearing his paper at that time, and did not know of his having treated his cases in this manner until some time after I made my first operation.

explain later on, I consider it only changing one pathological condition for another at some risk to the patient's life. But I admit we do meet with cases, such as prolapse of the uterus accompanied with more or less pathological changes in the appendages, where no other operation will effect a cure, and for those cases it will remain a favorite with many surgeons.

Owing to the possible risk of death attending laparotomy for ventral fixation of the uterus, another more conservative, less dangerous, and for many cases much more desirable operation has kept pace with the growth of hysterorrhaphy. I refer to Alexander's operation, first made in 1881, for the relief of retrodisplacement of the uterus by shortening the round ligaments. His example was soon followed by many operators. To-day it is being performed, but, if I am not misinformed, with much less frequency; and, as a result of the failures that have occasionally attended it, efforts have been directed towards some modification of the operation that would insure universal success. One has lately been devised which I deem well worthy of careful consideration. Dr. Edebohls, of this city, in a paper entitled "A Modified Alexander-Adams Operation," read before the Tenth International Medical Congress at Berlin, gave the results of his experience with eighteen cases. His method of operation is the same as that of Alexander until the external abdominal ring is exposed. Then, instead of attempting to pick up the ligament at that point, he passes a grooved director along the inguinal canal, and with a knife or scissors he cuts up the canal its entire length; the round ligament is then picked up with a blunt hook, at the internal ring, and gradually drawn forward, carrying the anterior layer of the broad ligament with it; the latter is then gently peeled off the round ligament and allowed to drop back through the internal ring. By this method the ligament is more easily secured, less liable to be broken, and with care there is no reason why the peritoneum should be opened. The ligaments are then secured by passing the sutures through them in reclosing the canal. So far as I am able to judge, I should consider the modification a good one. As to the increased or diminished liability to hernia from cutting up the canal, I am not able to judge.

Respecting some of the dangers which menace the success

of this operation, I first quote from Alexander's paper, read before the Ninth International Medical Congress at Washington, this remark: "That, owing to the disturbance of the inguinal rings and canal, there is, no doubt, a slight tendency to hernia produced by the operation, requiring plenty of rest afterward, and the wearing of an abdominal belt for some time to prevent this tendency"—the former of which the majority who require the operation cannot avail themselves of. Alexander admits that pelvic adhesions, prolapsed ovaries, and thickened appendages also render the anatomical success of the operation somewhat uncertain, and in such cases advises that the Hodge and stem pessary be used while the healing process goes on, and at the same time warns us to be prepared to find the result a therapeutic failure, owing to the dependence of the symptoms upon some other cause, in spite of the most careful local examination. If we couple these words of advice from the originator of the operation with the well-known fact that forcibly pulling the uterus forward and fastening it there by the round ligaments does not tell us anything respecting the pathological conditions within the pelvis which caused and maintained the uterus in its malposition, or how much disease the malposition has directly or indirectly produced in the appendages, I, for one, am impressed with the idea that this operation is really an experiment each time it is performed, to which is attached the hope that the round ligaments, put in opposition to post-uterine adhesions and changes which have taken place in the uterus itself at the seat of flexion, may be endowed by Dame Nature with sufficient strength to hold out in this fight between two opposing forces until a victory shall be given in favor of the operation. If such be true, then the field for Alexander's operation is limited to simple cases of retroflexion and retroversion unattended by diseased appendages and adhesions in their neighborhood, and therefore not applicable to the treatment of such cases as I shall report. I am quite sure that I am not alone in this opinion.

From a personal conversation with Dr. Thomas, I learned that he had made Alexander's operation for the relief of retrodisplacement of the uterus six times. In four of these cases the result was unsatisfactory, and in two the result was

good, although the doctor did not think, at the time of the operation, that he had secured the ligaments. He prefers hysterorrhaphy to suspension of the uterus by Alexander's operation, the latter of which he believes destined to pass out of the catalogue of gynecological operations. His reason for such an opinion is based upon a long and careful study of the physiological and pathological appearances of the round ligaments in the many hundreds of cases of laparotomy which it has been his privilege to perform.

Since the operations above mentioned were first adopted as methods for correcting a displacement of the uterus that would not yield to forms of treatment applied per vaginam, I have maintained the opinion that these methods, when employed, although they correct the malposition, accomplish the work by simply changing one pathological condition for another, the latter of which may be less desirable to the patient than was the condition for which the operation was performed. It does not seem to me that nature intended that the body of the uterus in woman should ever be fastened to any portion of the abdominal walls. It has been my privilege to witness more than five hundred laparatomies, and I have yet to see the case where the uterus was bound to the abdominal walls, unless it was the seat of fibroid development which had lifted it high in the pelvis and peritonitis had subsequently lighted up about it. The diaphragmatic action of the pelvic floor is one of nature's safeguards against intra-abdominal pressure in breathing, exercise, and, to some extent, in disease. I contend that if we fasten the uterus to the abdominal walls it will interfere to a great extent with the proper action of the muscles of the pelvic floor. It will also imprison the bladder to a marked degree, necessitating its expansion in a lateral rather than an upward direction, thereby bringing into action two opposing forces, one from above forcing the uterus downward, and another from below forcing it upward. I am led to believe that the action of these forces, constantly exerted upon the fresh union between the uterus and abdominal wall, will, in time, separate them, just as they will produce hernia after laparotomy unless perfect coaptation and firm union are secured between the cut surfaces of the linea alba.

Many cases have been cited that would tend to contradict

this statement. I grant that the uterus may not return to its old position, but if second laparotomy could be made upon such case the uterus would be found freed from its original attachments. Such has been my experience with the operation of hysterorrhaphy. I have made ventral fixation by Kelly's method six times. In three of the six a ligature formed a sinus. I made second laparotomy in two of the cases, and in place of finding the horns of the uterus fixed to the abdominal walls where I had placed them, I found the uterus freed and separated from the walls by at least two inches, and the intervening space between the uterus and its old site of attachment occupied by the intestines glued together and firmly attached to the uterus and abdominal walls, while along the line of the sinus the intestines were perforated, in the first case twice, and in the second in three places. The third case passed out of my hands and I do not know the result.

My experience may have been particularly unfortunate, but at the time of operation every precaution was taken against infection, and the ligatures I used had been boiled in carbolized water for an hour previous to insertion. It was certainly an experience I did not care to continue, and I determined, if the opportunity presented itself, to attempt another method of operation which I thought would not be attended by such unfortunate results as those I have reported in three out of my first six cases of hysterorrhaphy. I now wish to describe the operation I have since made, and report the results obtained in four cases.

CASE I.—Mrs. S., German, age 25, married five years; two children, one miscarriage, latter two and a half years ago. Operated upon at Post-Graduate Hospital, December 6th, 1889. She had been an invalid since the miscarriage; the menses had been profuse and attended with such pain in the back and sides that she was obliged to remain in bed for three days with each period; cohabitation was painful, and, in fact, the slightest pressure about the uterus gave pain. Her local condition, as revealed by examination, was as follows: Perineum and cervix uteri badly lacerated, the uterus retroflexed to the third degree and bound. Endometrium thickened and fungous. Ovaries, tubes, and cellular tissue about the uterus very tender. I treated this patient faithfully with iodine applications

and glycerin packs three times weekly for six months. At the end of that time I could move the uterus and lift it into a perpendicular position with Emmet's repositor, but I had not succeeded in relieving her pain at the menstrual period, neither had I succeeded in reducing the length of time the flow was on, or the quantity of blood she lost. Becoming wearied with this method of treatment, I induced her to go into the hospital and have the lacerations repaired. At the time of operation I curetted the uterus and removed a large quantity of fungosities. The plastic operations were successful, and she left the hospital wearing a Thomas soft-rubber retroversion pessary, the uterus apparently in the first degree of retroflexion. She wore the pessary five weeks and was obliged to have it removed. I did not attempt the introduction of a uterine stem pessary, for I consider it a dangerous instrument when the uterus is fixed or when peri-uterine pain is a constant symptom. Tampons were substituted and persevered in for another six months. At the end of a year's time she had not been relieved of her pains and the menorrhagia still continued. I then sent her into the hospital again for operation, not telling her what I intended to do, only that I would not sacrifice her tubes and ovaries if it were possible to save them. I prepared her for a laparotomy, put her under an anesthetic, opened the abdomen, broke up the adhesions about the uterus, tubes, and ovaries (which proved to be quite extensive and string-band in shape), and then made the following operation: Taking the left tube and ovary first, I drew it up through the abdominal incision, saw that the fimbriated extremity was open, then, taking a piece of No. 27 silver wire slightly probed at one end, I gently passed it through the entire length of the tube into the uterus, demonstrating to those witnessing the operation that the tube was pervious. The ovary contained several cysts varying in size from a pea to an almond seed; these I tapped with a spear-pointed needle, by passing the needle directly through the ovary, squeezed the water out, and allowed the sacs to fill with fresh blood. The tube and ovary were then dropped back, and the right one brought up and treated in the same manner. An assistant was then asked to place two fingers within the vagina and lift the uterus as high as possible in the pelvis. Aided in this manner, I was able to bring the uterus

up close to the abdominal incision. Then with a pair of delicate, sharp scissors I denuded the peritoneum from the anterior wall of the uterus in an oval shape, taking care not to go too near the bladder. Then each round ligament was brought up and a portion of the peritoneal covering upon the inner side of it denuded to correspond with that upon the uterus. (See Fig. 1.) With catgut sutures, used in continuous stitch, I sewed the three denuded surfaces together, as seen in Fig. 2. In adjusting the sutures I took care to pass them deep enough in the uterine tissue to secure against their cutting out before union between the parts had taken place. The

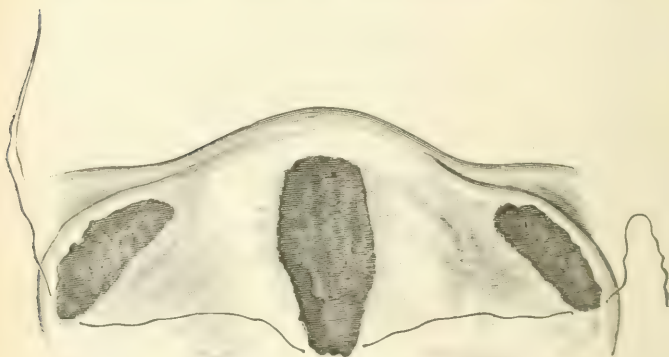


FIG. 1.

uterus was then allowed to drop back into the pelvis, and the traction upon the round ligaments at once drew the organ into a position of anteversion, and the sutured surface lay in apposition to the posterior surface of the bladder. I did not introduce a pessary, preferring to allow the operation to rest upon its own merits.

The objects gained by this method of operating I consider to be threefold:

1. I shortened the round ligaments, without sacrificing any of them, sufficiently to hold the uterus in a position anterior to the perpendicular line of the body, by simply changing their point of uterine attachment and including with them

the anterior fold of the broad ligament, across which the round ligament passes to reach the inguinal canal.

2. Denuding and firmly fastening the round ligaments to the anterior surface of the uterus thickened and gave extra support to the latter.

3. By this procedure I succeeded in maintaining the uterus in a normal position without fastening any portion of it to the anterior abdominal wall—a position which I think nature never intended it should occupy.

I have watched this patient with interest since the operation (December 6th, 1889), and made repeated examinations. The results which I am able to report to-day are, that whereas

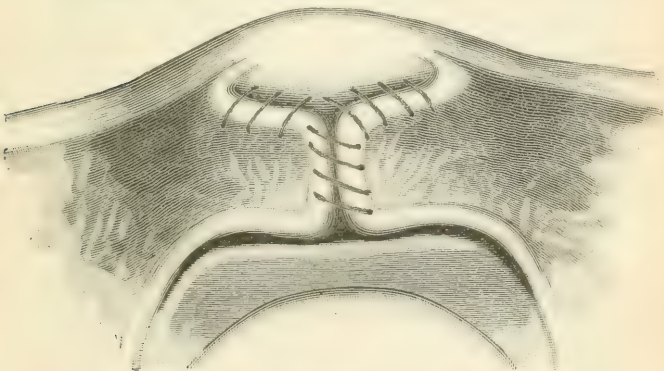


FIG. 2.

before the operation she was obliged to remain in bed three days with her menses, she does not at present experience the slightest pain or discomfort. Constipation has been relieved. Coition not painful. The uterus is in proper position, and no tenderness exists about the appendages.

I have reported this case somewhat at length from the fact that the retroflexion was so pernicious, and the ovaries the seat of such marked cystic degeneration, that after a lapse of ten months it would be interesting to know that the reflex symptoms at present are *nil*.

CASE 2.—Mrs. L., age 27, married two years. Operated upon April 24th, 1890. She consulted me in November, 1887, about

a year before she married. At that time she was suffering such pain with the menstrual periods that it incapacitated her for any work. Upon making physical examination I found the uterus completely retroflexed and quite immovable. The left ovary was also prolapsed, considerably enlarged, and exquisitely tender. She at once entered the hospital, and I commenced treatment for correcting the displacement. She remained in hospital fourteen weeks. During this time I succeeded in getting the uterus into fairly good condition, and introduced a Thomas retroversion pessary. She wore the pessary about six months. While wearing it she was quite comfortable, except that during the menstrual period her pain was just as great. She went West, and during the next year was under the care of several physicians, and by one she had the uterus repositied with a curved steel instrument introduced into the rectum and made to lift the uterus by shoving the rectum forward. She returned to me, after two years, in about the same condition as when I saw her first.

It is needless for me to narrate the treatment I subjected her to during another half-year. I will simply say it failed, and on April 24th last I made the operation for fixation that I have described, assisted by Dr. Foster, of Maine, and Dr. Aspell, of this city, to the latter of whom I am indebted for the drawings made at that time. With this case I introduced a Thomas soft-rubber pessary and allowed her to wear it some time. Examination made on October 6th shows the result a perfect one, the uterus in good position. All reflex symptoms have disappeared. She has gained much in weight, and has returned West, as she says, perfectly well. In this case the left ovary was nearly twice its normal size, the increase being due to cystic formations, several of which I punctured and drained. No inflammatory action in or about the ovary followed this treatment, for she never had pain in the side after operation.

CASE 3.—Mrs. L., age 29, widow four years, one child 5 years old, no miscarriages. Has suffered pain with the menstrual periods since maturity, the pain always located in the back and the left ovary. She had been an invalid since the birth of her child, and obliged to remain in bed with each period. Upon examination the uterus was found to be completely re-

troflexed, the left ovary was prolapsed with it, and both were quite firmly bound. She was obliged to support herself and child, consequently could not bear the expense of treatment, or even come to my office for it for any length of time. I prevailed upon her to try the boroglyceride tampons for a time, and while she could wear them she got some relief. The uterus could not be anteverted or even lifted to the perpendicular position, and efforts to adjust a soft pessary only resulted in increased pain and soreness. She was anxious to accept any operation that would give her relief rather than continue with her suffering. I advised having the uterus freed from its position and fixed anteriorly. May 25th, 1890, I made the operation, assisted by Drs. Ogden, of this city, and Keith, from the Woman's Hospital. The left ovary was double the normal size, and more than a drachm of fluid was taken from it. In this case, after the operation I introduced a Thomas soft-rubber pessary and allowed her to wear it through the summer. Examination on October 16th showed the uterus to be in proper position, the ovaries neither enlarged, prolapsed, nor even tender. She still has some pain with the menses, but remarks that it is so slight she does not mind it. Her periods are regular and last only four days. Her backache is a thing of the past. She has gained much in flesh, and reports herself as feeling perfectly well.

CASE IV.—Mrs. S., age 35, married twelve years. She suffered severe pain with the menses from maturity. At the age of 19 she was examined and told that she had a displacement of the uterus backward. She did not have treatment for it at that time. Her first child was a premature delivery at eight months. This was followed by a miscarriage and a second living child before she had been married quite two years. The retrodisplacement continued after the birth of the children. About eight years ago she went into the Burlington Hospital for local treatment, and remained there eight months. She left the hospital with a pessary supporting the uterus, which she continued to wear for five years. It gave her comfort, but did not cure her. Two years ago she returned to the hospital and had a laceration of the cervix repaired. She remained in the hospital the second time five months, tried to wear the pessary but could not, and has been

suffering ever since with pain in the back and sides. I saw her in consultation with Dr. Woodman in July last; found her in bed; the uterus was retroverted and firmly fixed, ovaries very tender. Giving such a history as I have narrated, I advised her to have the ovaries removed and the uterus fastened forward. She entered the Post-Graduate Hospital, and on September 20th I made laparotomy. The uterus and ovaries were quite firmly adherent to the pelvic cul-de-sac. The left ovary contained quite a number of cysts, which were drained, reducing the size of the ovary materially. I fastened the uterus forward in the manner I have described, but did not remove the ovaries. With this case it is too early to tell what benefit will be obtained from the operation, for time must elapse before the results from changing the position of the uterus and ovaries can be appreciated by the patient. This patient is now menstruating, and the pain and reflex symptoms attending are much less pronounced than they were with the last period. In this case the displacement had existed for sixteen years, and the changes in the structure of the uterus at the seat of flexion were quite marked. If the displacement returns in either of the four cases, it will be in this one.

It has been said that the union obtained between the anterior layer of the broad ligaments in this manner would give way and allow the uterus to retrodisplace again. I do not consider my experience with the operation sufficient for me to declare that it will not, but in three of the four cases reported more than six months have elapsed since the operation, and the uterus in each case is well forward. The object to be attained in all of these operations for the relief of retrodisplacement is to maintain the body of the uterus in a position anterior to the perpendicular line of the body until the causes which produced and kept up the displacement shall have been relieved and the uterus allowed time to return to a normal condition. If we can secure this result without imprisoning the uterus to the abdominal walls or interfering with the proper function of the bladder, I consider it an advance in abdominal surgery. This method which I have adopted with my last four cases, and which, for want of a better name, has been termed uterine desmopycnosis, is applicable to only a certain class of cases. It is not called for in cases of retrodisplacement of the uterus

unaccompanied by adhesions or peri-uterine disease. It is unnecessary for cases where the tubes and ovaries are down with the uterus, and so diseased that their removal is obligatory, but for cases where we find the tube unoccluded, and the ovary, although somewhat enlarged by cystic degeneration, not hopelessly diseased. I think this operation presents the following advantages over either hysterorrhaphy or Alexander's operation :

1. It corrects the displacement by utilizing the natural supports of the uterus without sacrificing any of them.

2. The proper diaphragmatic action of the pelvic floor is not interfered with.

3. The bladder is not imprisoned in the least, and its proper action is undisturbed.

4. There is no chance for intestinal adhesions about the line of sutures, for the latter lie in apposition to the posterior surface of the bladder, and adhesion taking place at this point simply elongates the utero-vesical junction.

5. In case of impregnation the uterus is free to lift in the abdominal cavity naturally. (This leads me to remark that the first patient operated upon became pregnant three months afterwards, and, fearing that it would interfere with the success of her operation, she injected the uterus with hot water and arrested the conception when she was about six weeks along.)

6. The use of catgut as a suture material in this operation does away with the dangers of the formation of sinuses by the ligature, such as I have mentioned as having occurred in the past.

HYPEREMESIS GRAVIDARUM AS AN INDICATION FOR THE INDUCTION OF PREMATURE LABOR.¹

BY

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THOUGH this subject is by no means of recent interest, it must nevertheless be conceded that it will still bear fruitful and profitable discussion. In demonstration of this I will cite but

¹ Read before the New York Obstetrical Society, October 7th, 1890.

one instance in recent medical literature. In the issue of the *Kansas City Medical Index* for April, 1888, Dr. A. L. Fulton narrates a fatal case of *hyperemesis gravidarum*. He had previously suggested the induction of premature labor, as he states in his report, but the consultants whose advice had been sought in the case dissuaded him from his course, to the disadvantage of the patient. Thus in this single case we have the expression of two different opinions, which were, beyond a doubt, the honest convictions of the physicians engaged therein.

That the subject is not new will be recognized when it is stated that the operation was first performed in cases of this nature in the year 1813 by Simmond. Also, in 1852, the subject was freely discussed by the French Academy of Medicine in Paris, on which occasion there was expressed such a diversity of opinion that no decided or well-defined conclusions were arrived at.

We are confronted at the outset with the question, "What is *hyperemesis gravidarum*, or, as it is also frequently called, persistent, irrepressible, uncontrollable, or obstinate vomiting of pregnancy?"

All cases of vomiting in pregnancy which can be remedied by direct treatment, or by measures addressed to other coexistent conditions, wherever situated, which by reflex influence induce this malady, are of course excluded from the category of hyperemesis. The grave form authors are accustomed to divide into several stages, usually three in number; but as these stages merge imperceptibly one into the other, the division is an arbitrary and artificial rather than a natural one. Suffice it to say that when the patient presents palpable evidence of physical exhaustion from lack of nutrition, with marked nervous and mental depression from the uninterrupted recurrences of nausea and vomiting, thus predicated a tendency to terminate disastrously in death, then it is *certainly* fair to assume that the patient is a victim to the disease. In the words of the celebrated obstetrician, Dubois, "the vomiting of pregnancy is uncontrollable when it affects seriously the health of the woman and resists the judicious use of a certain number of remedies."

One precaution must always be observed, and that is to avoid an exaggeration or magnifying of the symptoms in our

own mind, and therefore counsel should always, when feasible, be had whenever we have reason to suspect that we are dealing with a case of irrepressible vomiting. Lusk considers literally uncontrollable vomiting to be a very rare event indeed.

In themselves these cases do not present anything characteristic. The vomiting recurs at very frequent intervals. The stomach refuses all, or very nearly all, nutriment, solid and liquid. If the patient partake of ever so little, that little will be sufficient to excite the paroxysm of nausea or vomiting. Aversion to all food or drink soon follows. Progressive emaciation and debility, with the characteristic facies of inanition, follow in the train of symptoms. The phenomena usually attendant upon starvation will soon be noted. At times the paroxysms may remit more or less completely, but their absence is only delusive, for ere long they return in an accentuated degree and more threatening than ever. Although the diagnosis is therefore easy, yet several factors should be taken into consideration. First, pregnancy should be positively diagnosed; secondly, auxiliary causes of vomiting should be excluded; thirdly, the differential diagnosis between obstinate vomiting dependent upon pregnancy and that dependent upon some cause independent of pregnancy should be determined; and, lastly, that it is actually *hyperemesis gravidarum*, in contradistinction to the ordinary simple vomiting of pregnancy. The progress of the disease is usually slow, for the patient may not succumb until two or three months of suffering shall have elapsed. Dubois in thirteen years met with twenty fatal cases. In a table of 118 cases collected by a French writer there occurred 72 recoveries and 46 deaths. Some writers, like Burns and Desonneaux, record that they have never seen a fatal case. In my own obstetric practice during the past fifteen years, which has not been inconsiderable, I have met with two cases which terminated fatally, in one of which premature labor had been induced, and two cases which recovered in which premature delivery occurred spontaneously. These cases will be considered more in detail later on in this paper.

These cases present a serious aspect from the very inception of the symptoms, because with all forms of treatment,

abortion included, the results must be regarded as problematical and uncertain.

The violent character of the attempts at vomiting in grave cases often effects abortion, or at least a partial separation of the placenta from the uterine walls. These results are to be desired rather than feared, for as they cause the death of the fetus, the offender in the premises, the vomiting will cease as a consequence thereof, and thus the mother will be enabled to escape the threatened dangers of this affection.

Speaking in general terms, the child is but little affected by the excessive vomiting of the mother, as regards its nutrition. I do not believe that there is any case on record in which the child's death has followed from inanition as a consequence of the deficient nutrition of the mother.

I shall not enter deeply upon a discussion of the ethical and polemical view of this question, as it is not strictly germane to the subject matter from an obstetrical standpoint. I will, however, refer to it broadly in general terms. I would say that when the life of the mother is demonstrably involved in danger, be it more or less remote, then, in my humble judgment, the sacrifice of the fetus is justifiable. Of course a grave moral responsibility rests upon the obstetrician at such times, and a consciousness that he is doing right in the particular case under consideration must be his support. It is therefore only when the danger is obvious and extreme, imminent rather than contingent, that this operation can be permitted. If I remember correctly, Cazeaux held the opinion that under no circumstances ought premature labor to be induced because of vomiting in pregnancy. But later obstetricians do not agree with him, though all admit that the operation is demanded very rarely.

The two principal arguments arrayed against the operation when performed in these cases are, first, that in several cases of this nature when the patient was apparently *in extremis* she had rallied from that condition and had gone on to the natural termination of her pregnancy, bringing forth a living child; secondly, that the physician is not justified in the performance of an operation which has for its object the deprivation of the child's life.

In regard to the first objection, it may be stated that such

cases are rare exceptions to the general rule of the fatal termination of these cases, and should therefore not be set up as precedents or be utilized for formulating our rule of action in their treatment. Furthermore, the same good results would probably have been secured if the operation had been done.

In answer to the second proposition, it can be said that with the operation the chances in favor of saving the life of the mother would be enhanced, whilst without the operation, if the mother should die, the child must of necessity also die. Every case of the kind must be approached with a judicial state of mind. We must have neither preconceived opinions to sustain nor prejudices to cherish, but we must base our decision upon the peculiar merits viewed from every side of each individual case.

Many cases have been recorded in which immediate relief followed the operation. This truly proves the safety of the procedure in this class of cases, but it does not therefore warrant us in commending the operation as a routine method of practice.

Technically speaking, the induction of premature labor is to be preferred to the induction of abortion, because after the fetus shall have become viable the operation will be in the interest of both mother and child. The determination of the time when we should interfere is therefore one of the most delicate questions which we will be called upon to consider in the practice of our profession. On the one hand we must avoid precipitate action for the child's sake; and, on the other hand, we must not delay our decision too long, lest the patient's condition become so bad that the additional shock of the operation cannot be borne with safety. It must be remembered that the vomiting may stop spontaneously at the termination of the third month of pregnancy, or, when it is more persistent, after the sixth month of gestation. These facts again emphasize the position that whenever possible we ought to postpone the operation until viability of the fetus is assured. In the meantime, if the stomach be so utterly rebellious, the patient's nutrition can be maintained (imperfectly, it is true) by the employment of nutrient enemata. Dr. Campbell, in vol. iii. of the Transactions of the Ameri-

can Gynecological Association, on page 273, records the history of a patient who was sustained by rectal enemata for a period of fifty-two days. One of my patients was nourished in this manner for a period of a few days longer than two weeks. It will be very rare, however, to meet with patients whose recta will tolerate the irritation of prolonged repetition of enemata.

It is both interesting and noteworthy in this connection that Stöcker mentions the case of a woman who, whenever she became pregnant, suffered from vomiting to such an extreme degree as to endanger her life, thus necessitating an artificial delivery in three consecutive years (*Centralblatt für Gynäkologie*, April 20th, 1889).

I will bring my topic to a close with the recital of a number of cases, in chronological order, which have come under my professional care, having a bearing on the subject in question:

CASE I.—Mrs. T. B., æt. 37 years, consulted me in the fourth month of her second pregnancy in reference to excessive vomiting. Her first child was then 4 years old. The patient had become greatly emaciated and reduced in strength from the excessive vomiting, which had persisted from the second week after conception. The stomach was so rebellious that it would not tolerate the simplest and most innocent article of food or drink. All medicinal measures were futile. Nutrition was maintained by the employment of enemata. Notwithstanding all that was done, however, the patient grew constantly weaker, and, after having been sustained by the nutrient enemata for nearly three weeks, spontaneous premature delivery occurred at about the middle of the sixth month of gestation. The infant, which was of the female sex, lived nearly a week, dying from inanition. Immediately after delivery the nausea and emesis disappeared, the patient making a speedy recovery.

CASE II.—Mrs. H., æt. 42 years, the mother of three children, was suddenly seized with severe uterine pain and hemorrhage, whereupon I was summoned to her relief. She gave a history of having suffered greatly from nausea and vomiting for nearly four months, which was the length of time to which gestation had advanced when I saw her on this occasion. After diligent search and inquiry, no other rational or tenable

cause could be assigned for the miscarriage than the excessive reflex vomiting. Nothing unusual was observed in her condition at the time of miscarriage or subsequently, and she soon regained her usual state of health.

CASE III.—Mrs. J. H., æt. 41 years, when pregnant eight months, engaged me to attend her in her expected accouchement. She complained that during her whole pregnancy she had been afflicted with excessive vomiting. Her appearance did not belie her statement. I had known her in health as a strong, robust woman, but she had become reduced more than one-third in weight and size. She was very feeble, and her condition caused me much anxiety. I endeavored to build her up in every conceivable manner; the nausea and vomiting was only partially controlled. Premature delivery was suggested as a measure of relief, but, because of conscientious scruples, it was refused. At length uterine contractions appeared at the end of the normal term of gestation. As I was absent at the time, my colleague, Dr. Chas. E. Young, assumed charge of the patient. The doctor found her in a very critical condition, almost in a state of collapse; and as the os was sufficiently dilated, and the patient, in his judgment, did not seem able to withstand the shock of a prolonged labor, he with the forceps delivered her of a female child which died in a few minutes. The placenta was readily secured, but within five minutes after delivery of the secundines his patient had expired. This catastrophe was undoubtedly owing to the extreme prostration of the woman in consequence of the nine months of constant, excessive vomiting, which rendered her unable to undergo the natural shock of parturition. I must add that Dr. J. J. Henna, of this city, was called by the family to see the case with Dr. Young, and coincided with the latter in the course of treatment.

CASE IV. occurred in the person of the same patient whose history is related above as Case II. Mrs. H.'s fourth pregnancy was two years after that, when she was 44 years old. I was summoned to see her about the middle of the third month of gestation. She had a repetition of the same experience as in her third pregnancy. Everything known to medical science usually employed in these cases was tried, but without avail. The patient and her family desired the induction of

premature labor. I postponed its performance a number of times. The patient, however, became weaker and weaker, and seemed less able to withstand its effects than in her previous pregnancy. She had not partaken of food practically for nearly a week. After mature deliberation and consultation with colleagues it was concluded to perform the operation. The operation was done *secundum artem*, but it was done too late. For though the operative measures were successful, the patient had become so debilitated from the repeated vomitings that she finally succumbed from sheer exhaustion within ten days after the operation.

From these histories the following deductions can be drawn: First, that when nature spontaneously interrupts the course of pregnancy by the occurrence of premature delivery, the patient recovers. Secondly, that when pregnancy is allowed to proceed uninterruptedly to its natural termination, an almost certain fatal result will befall both mother and child. Thirdly, that when the patient, the victim of grave vomiting, is permitted to advance too far in the course of pregnancy before the operation of induction of premature labor is done, the probability is that she will not be able to resist the added shock of the operation in her already debilitated condition, but will succumb. Fourthly, that when the operation is done *secundum artem*, at the properly elected period of time, the probability is that we will save the life of the mother in any event, and in many instances, in proper cases, the lives of both mother and child.

And upon these deductions the following conclusion is based: When hyperemesis seriously and dangerously affects the health of the woman, and does not respond to a judicious and systematic course of treatment with all known and approved remedies, then the operation of the induction of premature labor in such cases is at once justifiable and the only thing left for us to do.

CONCERNING CRANIOCLASM—ANOTHER CRANIOCLAST.¹

BY

FRANK A. STAHL, M.D.,

Demonstrator of Obstetrics, Rush Medical College,
Chicago, Ill.

(With one woodcut.)

My subject, "Another Cranioclast," may not prove so interesting a paper as one on Cesarean section or the intra- and extra-abdominal treatment of the stump after Porro's operation, yet the cranioclast is so important a member of the accoucheur's armamentarium that any change in it or its workings will interest him as much as any suggestion in the details of the operation, especially if it be for the better.

It is to Mesnard, 1753, that we owe the introduction of a special instrument, the cranioclast, to extract the perforated head. Though his was a small instrument, it proved very capable. As modified by Winckel, Sr., it is still made use of in some of the maternities of Germany. This did not deter Simpson, almost a century after, from elaborating upon the principle of the Mesnard instrument, nor Carl Fernald v. Braun from introducing changes in the Simpson that have resulted in giving us the improved and successful Braun cranioclast.

Even this latter instrument of Braun has undergone several changes. Veit recommended that the rounded extremity of the spoon of the male blade should be made sharp-pointed instead of rounded, that it might serve as a perforator. Another very important change that has been made is that of shortening the instrument and making it lighter in structure. The length of the original Braun is 47 cm., that of the shorter 37 cm.; the weight of the former, 1 kilo, the latter about 850 gm.—so that now it is convenient to recognize the large Braun and the small or modified Braun. It is the latter instrument which is preferred by the Munich school, and that Prof. Winckel has reference to in his description of the Braun cranioclast in his "Geburtshülfe," recently from the press.

Notwithstanding we have so excellent and effectual an in-

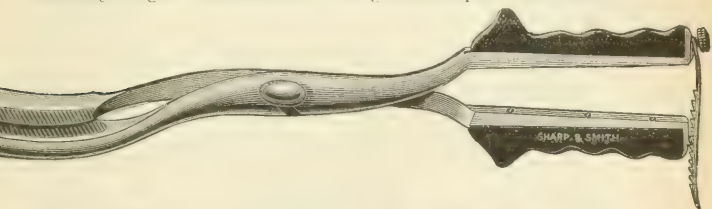
¹ Read before the Chicago Medical Society, October 6th, 1890.

strument as the Braun, I have taken the liberty of suggesting some further changes, the result of ideas gained by personal observation made in several of the large maternities of Europe, from operations performed by some of the most skilled and celebrated accoucheurs. In my observation I noticed that in performing cranioclasm, notwithstanding the operator had carefully introduced, applied, and locked (by articulation) the blades of the instrument, occasionally they would fall apart or change in point of application, due to the weight of the separate blades and the feathering permitted by the Busch-Brunninghausen small button lock, necessitating re-application and locking. After locking (by articulation), wishing to exert compression and firm purchase, the Cohen screw compression lock was adjusted and tightened. To do this either an assistant was necessary, or the exploring hand, introduced as informant, guide, and protector, was partially or wholly withdrawn to assist in holding the handles to fasten the compression apparatus. To release the instrument the same conditions presented themselves: assistance was required to unscrew the lock, the external hand unassisted not being able to accomplish it readily. Where repeated applications became necessary—as in breaking up the calvarium, or in cases in which tissues tore or fractured or instrument slipped—the time and trouble consumed thereby were greater than that required to carry out the operation itself. Then, too, I noticed that many of the instruments were so heavy in structure that it was too difficult for the external hand unassisted to manipulate one with ease and rapidity. In some cases it was found necessary to operate under the guidance of the eyes, as advocated by Skene, employing a large-sized speculum. Many objections might be raised to this practice. It appeared to me that, were an instrument devised requiring the external hand only in its manipulation, leaving the exploring hand perfectly free to concern itself with the maternal and fetal parts and the spoons of the instrument, as good if not better and more complete information could be gained through the fingers of the exploring hand than by means of the use of the eyes, and certainly with considerably less exertion to the operator as well as to the patient.

The necessity of special craniotomy bone forceps presented

itself, the cranioclast being too unwieldy to be conveniently used as such.

These are some of the considerations which led me to devise this cranioclast, aiming to overcome what I consider imperfections in other instruments. It is lighter in structure, has better locks, can be manipulated with one hand, yet is sufficiently strong to receive and expend as much and even more force than is called for in any craniotomy. It can with ease be used as a bone forceps. The whole instrument is built lighter than the Braun; its weight is 720 gm. Its length is the same, 37 cm. There are two blades, a male and a female. The instrument differs in the following points from the small Braun: The spoon of the female blade is fenestrated and grooved, that of the male being solid, presenting ridges which fit into the grooves upon the female



blade. The bevel of the internal edge of the fenestra has been increased, as I found that in many instruments that I have examined, when the spoon is seized in the palm of one hand and twisted by the other hand, the edge has shown a tendency to cut. Picture the swollen and congested soft parts in place of the hand; may not this be a cause of some of the traumatism consequent upon craniotomy? The articulation is made by means of the Brunninghausen large button lock. The male blade presents a pivot surmounted by a large button, having a convex upper surface—the lower being plane—fitting into a notch in the female blade. Into the notched edge of the female blade a groove has been made. Into this groove a sliding adjustment has been fitted, which when pushed forward projects across the entrance to the notch and prevents the blades from slipping apart. This little contrivance considerably enhances the value of the instrument, especially when used as a bone forceps. With it

closed, the blades cannot slide apart; without it, as the blades are opened to seize a part or fragment, they readily slide from one another. The shanks and handles are similar to the Braun, but lighter in structure. For the purpose of locking the blades upon making compression, I have adopted the ratchet lock, attaching the ratchet, by means of a dovetail and screw arrangement, to the extremity of the handle of the female blade. With this lock the instrument may be locked and unlocked with more ease, less time, just as securely, and with more convenience than with the Cohen screw compression lock of the Braun. For his smaller instrument Auvard also has adopted the ratchet lock, but attaches it to the shank in front of the circular thumb and finger handles. In the case of the Braun, compression and purchase is made by approximating the handles by means of the screw lock. To steady the handles in adjusting the screw requires one hand, to tighten it another. If no assistant is present, the exploring hand is partially or wholly withdrawn to render the assistance required. This necessitates either an assistant or repeated withdrawing and introduction of the exploring hand.

With this instrument *one hand only* is required to compress and lock. As compression is made by the hand forcing the handles together, they are at the same time fixed and securely locked by means of the ratchet. The exploring hand need not alter its position or render any assistance.

To unlock the Braun the assistance with its inconvenience is repeated. To unlock this cranioclast one need exert but a slight pressure upon the extremity of the ratchet with the little finger of hand seizing the handles. The blades then immediately spring apart.

In answer to the question, "Can sufficient compression be exerted by means of this instrument with its ratchet lock, requiring but one hand to operate it?" my reply is, "Yes."

With the Braun, compression is made at first by approximation of the handles by the hands, then continued by adjusting and tightening the screw. Nearly as great compression can be made by the hand *minus* the screw apparatus as *plus* the apparatus. This may easily be demonstrated by applying the Braun to a fetal head. Up to a certain point nearly all the power applied through the approximation of handles is

expended upon and through the spoons of blades seizing the fetal part. Beyond this point the increase of power is almost wholly spent in overcoming the elasticity of the shanks and handles between the articulation and the compression locks. The same is true also of this instrument.

A word as to its introduction and subsequent management. Its introduction is the same as with the Simpson and Braun instruments: the male blade is first introduced, and then the female blade with ratchet attached. After the handles are approximated the entrance to notch is closed by pushing forward the sliding adjustment, so that if, after the first application, it becomes necessary to remove the calvarium in pieces, the cranioclast has been converted into a perfect bone forceps, which can be introduced and withdrawn, opened and closed, the part seized and released, without any assistance from the internal hand (excepting in uterus or vagina); in fact, there is no need of the exploring hand changing its position from contact with fetal parts. The instrument is introduced, closed, and opened within vagina or uterus as is any other bone forceps.

To introduce a large-sized cranioclast and a smaller one would be an easy matter, but I do not think any advantage of consequence would be gained thereby, whether the fetal head or operating hand be large or small. With my instrument I have broken up large fetal calvaria and been able to remove quite small pieces of fractured bone.

Since bringing out the instrument, which was in January last, I have been using it in the courses of practical operations of obstetrics in Rush Medical College, and find it fulfils all the purposes I have herein mentioned.

En résumé permit me to mention some of the advantages which I believe this cranioclast possesses: Its lightness, weighing 25 oz., the small Braun 30 oz., the larger Braun 35 oz. Its blades, being articulated, do not fall apart so readily. It requires no assistance other than that of the external hand to lock and unlock the blades. It can be manipulated with one hand. With its use the exploring hand is introduced fewer times. When articulated it becomes a perfect bone forceps. It exposes maternal soft parts to less violence. The exploring hand proves a better protector and informant with an

easily managed instrument than with one less so. The operation of cranioclasia is shortened, simplified, performed with less labor and more comfort to both mother and operator.

REPORT OF TWO CASES OF TUBAL PREGNANCY: LAPARATOMY; RECOVERY.¹

BY

EDWIN WALKER, M.D., PH.D.,

Evansville, Ind.

CASE I.—Mrs. E. S., age 27, married four years; sterile. Was called to see her on the evening of August 11th, 1890. Found her suffering with severe cramping pains in the lower part of the abdomen, worse on the right side. She had suffered with some uterine or pelvic trouble before marriage. She had leucorrhœa, which has continued to the present time, but not so profuse for the past year. Since her marriage she has been an invalid almost all the time. At first she had more pain in the left iliac region, but for a year or more it has been worse in the right. For the past year she has been much worse, and had frequent attacks similar to the present one. For the last three weeks, however, the pains were much more severe, and at times unbearable. She has suffered much with backache, headache, smothering spells, and general nervousness. Bowels were generally constipated. Menses have always been very irregular; often missed a month or two; sometimes came too soon, oftener too late. For the past year the flow has been very scanty, lasting from one to three days, and accompanied by severe pain during the entire flow. She menstruated March 30th, April 26th, May 18th, June 29th; in July missed. August 1st sanguineous flow appeared, with attacks of cramping pain, and continued until the time of operation. Nothing resembling membrane was noticed in the discharge. She had nausea in the morning. The pulse was full and strong, temperature normal, and, except the pain, her condition was good. I administered a hypodermic of morphia, and told her I would see her

¹ Read before the Mississippi Valley Medical Association, Louisville, October, 1890.

the next day. The following morning I found her comfortable and she felt much better. I attempted to make a bimanual examination, but it was so painful I had to desist. For various reasons the examination was postponed until August 16th, when there was a severe attack of pain. With the assistance of Dr. Hodson an examination under ether was made. A soft tumor as large as the fist was found to the right and behind the uterus. The latter was small and very movable. The left side was normal.

The next day, August 17th, assisted by Drs. Vaughn, Owen, Norman, Linthicum, and Hodson, the patient was etherized and the abdomen opened. As soon as the peritoneum was cut through, a dark, bloody fluid began to escape. The tumor was with little difficulty drawn out. The most of it was coagulated blood adhering to the ruptured tube. More than a pint of clotted blood was also removed. The tube and ovary were ligated with silk and the entire mass removed. The rent was about one inch and a half in length, on the superior aspect of the tube. This portion was lined by a membrane (chorion). No fetus was found. The abdomen was thoroughly irrigated with several gallons of boiled water at a temperature of 105° F. This consumed more time than the operation itself. I wanted to continue until the water came out clear, but after twenty to twenty-five minutes it was still distinctly reddish. As careful examination failed to disclose any bleeding points, I proceeded to close the abdomen. A glass drainage tube was inserted, the wound closed with silkworm-gut sutures, and a light sublimated-gauze dressing applied.

Patient reacted nicely, and, except some pains and vomiting for the first twelve hours, progressed favorably. There was considerable drainage for the first twenty-four hours, but by the third day it had almost ceased and the tube was removed. The stitches were taken out the twelfth day and the patient sat up. The highest temperature was 101 $\frac{1}{2}$ ° and pulse 104. Milk appeared in the breasts and gave some little trouble.

When I returned from the operation (August 17th), I found waiting for me a lady who gave the following history:

CASE II.—Mrs. I. W., age 35, twice married, the last time

four months ago; has one child 6 years old. She had been sewing and working very hard, and was poorly nourished. She says she never had any uterine trouble. Menses were always regular up to the last appearance, June 18th last. July she missed. From the 15th of July she felt slight pains and thought she was "coming unwell," but nothing appeared until August 11th, when a sanguineous discharge commenced and continued until after the operation. August 14th she passed something that looked like mucous membrane, which I did not see. Pains became more severe from this time. She had had morning sickness since she missed her period. She was suffering considerable pain when she came to my office. I attempted to make an examination, but could not make a satisfactory one on account of soreness. I gave her an opiate and told her to let me know her condition the next day. She felt much better, and sent word she was well. About 5:30 p.m. the day following (August 19th) I was summoned in haste. I found the patient living in a single room with surroundings most unpromising. She was suffering greatly with cramping pains in left groin. I administered a hypodermic of morphia, which soon relieved her. Her pulse was good, temperature normal. Later in the evening she grew much worse, and required two half-grain doses of morphia, two hours apart, to relieve her. This narcotized her to such a degree that the family became alarmed and summoned me at 2 a.m. Her pulse was good, however, breathing slow, and I left without attempting to arouse her. I found her a little better in the morning. At no time was there anything like shock or collapse. I insisted that she be removed at once to the hospital for examination, and operation if necessary. Owing to some misunderstanding this was not done until late in the evening. When she arrived at the hospital the temperature was 100° , pulse 100 and good, and with one-third grain of morphia she rested well all night.

The next morning (August 21st) at ten o'clock, in the presence of the same gentlemen who assisted with the first case, the patient was etherized and the abdomen was opened. The same condition was found as in Case I., except that the trouble was on the left side and the ovum located a little differently. The rupture in the tube was about one inch in length, on the

anterior aspect. The ovum had occupied only the outer one-third of the tube, and was also firmly attached to the omentum. Part of the hemorrhage had come from the vessels of the latter, and after the tubes and ovary had been removed a piece of membrane similar to the one lining the tube, as large as a silver dime, remained. Fearing that this might cause hemorrhage, the part of the omentum to which it was attached was removed. A case is reported by Eberth and Kaltenbach (*AMERICAN JOURNAL OF OBSTETRICS*, 1890, p. 915) in which death was caused by hemorrhage from "floating vascular pseudo-membranes." The pulse became very feeble before the operation was completed. This improved during the irrigation with the hot water. A considerable quantity of water was left in the abdomen, and aided, I think, in bringing about reaction. The water came out clear in a few minutes, and a drainage tube was introduced and the incision closed as in Case I. She suffered none from shock or vomiting and very little pain. The recovery was uneventful. Drainage tube was removed on the second day, and sutures on the twelfth day. Highest temperature, 100° F. The patient had been so much reduced that it took a little longer to regain her strength. She left the hospital on the 8th day of September, or the eighteenth day.

It is not my intention to attempt to discuss the subject of tubal pregnancy. The many able articles on the subject during the last few years have presented about all the points worthy of consideration. I want merely to call attention to the fact that there were no symptoms in either case that would make one positive that rupture had taken place. The size of the tumor would lead to the suspicion, but the pregnancy might be older than the menses seemed to indicate. There was no shock in either case. It is equally true that no one could tell whether further hemorrhage would occur. While it is true that some such cases recover after rupture, it seems to me the danger of delay is greater than a laparotomy.

The following quotation from Prof. Goodell (*AMERICAN JOURNAL OF OBSTETRICS AND DISEASES OF WOMEN AND CHILDREN*, 1889, p. 1191) so aptly expresses what I consider the present status of the question of treatment of cases of tubal pregnancy, that I cannot do better than to close my report

with it: "As we can never know positively beforehand whether or not hemorrhage has occurred, my own feelings are in favor of immediate section. While the difficulties of diagnosis are undoubtedly very great, this need not interfere with our treatment. We find a woman suffering certain pelvic symptoms; we discover an extra-uterine tumor of some kind. Now, a painful pelvic tumor must be removed, whatever it is. The only change in the treatment would be to hasten on the operation were the symptoms pointing to extra-uterine fetation."

CORRESPONDENCE.

DR. BACHE EMMET'S CASE OF TUBAL PREGNANCY.

TO THE EDITOR OF THE AMERICAN JOURNAL OF OBSTETRICS.

(1) DEAR SIR:—In a communication to your JOURNAL of November, 1890, Mr. Lawson Tait comments upon the case of tubal pregnancy which I reported to the Obstetrical Society of this city in May of the present year.

I then stated that, by the use of galvanism, which was resorted to for the purpose of destroying the ovum, this body had been forced on towards the cavity of the uterus and had been expelled entire.

As an additional feature of interest, I mentioned the fact of the passage of the decidua the day after, and showed the double specimen.

Now, inasmuch as Mr. Tait says, "I absolutely refuse to accept any such improbability without the evidence of intra-abdominal examination, either by abdominal section before death or by cadaveric section after it," it would seem idle to notice the communication at all, in that I am not in a position to establish my point by such means; but, for the purpose of recording an additional element in the history of the case which occurred subsequently to its narration, I beg you will allow me to mention it, in that it is of interest and may have some convincing force with those, at any rate, who do

not insist upon seeing into the abdominal cavity of a woman who still lives.

After the passage of the decidua there was a slight show for five days, when, of a sudden, at night, there came quite a profuse flow, amounting, in the mind of the patient, to a hemorrhage. I was out of the city, and Dr. Wm. T. Lusk kindly saw the patient in my place. He made an examination of the pelvis, after hearing the history of the case, and found, as he afterward told me, an enlargement of about the size of a goose egg at the site of the left Fallopian tube, near its outer extremity. He applied a light tampon, reassured the patient, and left her comfortable. He has since told me also that his examination was sufficiently complete to convince him that *there was not a bifid uterus*.

The following morning I saw the lady, found that oozing had been continuous, found the mass out to the left side, I should say the size of a pigeon's egg, which was positively not there two days before; and I attended her constantly afterward, making light dressings to absorb the slight but steady oozing, and so was enabled to witness the gradual change in size of, I humbly suggest, the blood clot at the site of the ovum implantation, until its seeming disappearance some weeks later.

There was a day's show of menstruation in June totally apart from the incident mentioned and totally different in character, and a normal one in July, after which the patient sailed for Europe.

Now, since Mr. Tait asserts in his letter to you that in his book he certainly says nothing as to what ought to happen to cases of other people, and, at the same writing, seeks to establish clearly just what did happen to my case, even allowing himself the discourtesy of incidentally calling my diagnosis "a blunder," it is clear that he has very materially changed his habit, and it may best serve him if I refer him back to his own words, substituting merely his own name for that of a gentleman addressed in the original: "My only dictum is about facts of my own cases, and" Dr. Tait "is not in a position to criticise that."

Truly yours,

BACHE McE. EMMET.

TO THE EDITOR OF THE AMERICAN JOURNAL OF OBSTETRICS.

(2) DEAR SIR:—Kindly allow me space for a single word in reply to Mr. Tait's statement that I grossly misrepresented him. I emphatically deny that I did anything of the kind. Here is my proof:

"Dr. Grandin said that it was another instance of what might happen contrary to the dictum of Mr. Tait. This specimen, according to Mr. Tait's published views, should have found its way between the folds of the broad ligament, and should not have entered the uterus."

Mr. Tait says: "It is perfectly clear that in all cases of tubal pregnancy, when the ovum is growing, the tube must burst, and that it bursts in two directions—either in the peritoneal cavity or into the cavity of the broad ligament" ("Diseases of Women and Abdominal Surgery," vol. i., pages 483, 484).

Now, sir, Mr. Tait does not say here, nor does he in the context, that "all the cases of tubal pregnancy which have fallen under my (his) notice" have ended either by rupture into the peritoneal cavity or into the cavity of the broad ligament. He does say, however, that "in all cases of tubal pregnancy" the tube, if it bursts, must do so in one or another of these directions, and this is exactly the opinion which I credited to him.

I submit, sir, that it is high time Mr. Tait should learn that it is the reverse of courteous—to use a mild term—to indulge in such expressions as "gross misrepresentation" without making sure of the ground on which he stands. Evidently I have read his book more carefully and critically than he has. It fairly bristles with similar dogmatic and discourteous statements.

Sincerely yours,

EGBERT H. GRANDIN.

36 EAST 58TH STREET, November 9th, 1890.

[This discussion, so far as this JOURNAL is concerned, is herewith closed.—ED.]

TRANSACTIONS OF THE NEW YORK OBSTETRICAL SOCIETY.

Stated Meeting, October 7th, 1890.

The President, JOSEPH E. JANVRIN, M.D., in the Chair.

SECONDARY LAPARATOMY FOR INTESTINAL OCCLUSION; RECOVERY.

DR. FLORIAN KRUG, in presenting the specimen, said he did so, not on account of its intrinsic merit, but because of the patient's after-history.

The patient had been operated upon a week before for double pyo-salpinx and ovarian abscesses. The operation was a difficult one on account of the firm and extensive inflammatory adhesions, especially behind the uterus. At its close he washed out the abdomen and introduced a drainage tube. In accordance with his custom, the patient had been given a seidlitz powder half an hour before administering the anesthetic, which was repeated after the operation. She did well that day, but the day following the pulse was very rapid, although the temperature remained normal. The evening of this day, Wednesday, there was some tympanites, and vomiting persisted, due, he hoped, to the ether. Thursday morning the tympanites had become worse, the pulse rapid, the temperature still normal; nothing was retained by the stomach. On removing the dressing and drainage tube the wound appeared all right. High enemata and various laxatives were given, but no passage could be induced, and it seemed there must be intestinal occlusion. This seemed the more probable, for in detaching the tubes and ovaries he necessarily had created a very large raw surface on the posterior face of the uterus. On Saturday he decided to open the abdomen, found signs of beginning peritonitis, and was fortunate enough, on introducing his finger, to at once come upon a portion of the intestine glued down to the posterior surface of the uterus. It proved to be the descending colon, and was firmly fast as an angular loop. After pulling it loose and straightening it, he washed out the abdomen with a number of gallons of sterilized hot water and put the patient to bed. She rallied well, and during the night flooded the bed with fecal matter. The pulse fell from 165 to 110 immediately after the operation, and to-day had reached 80, rectal temperature 99.2°. The

patient was able to retain food, and was well on the road to recovery.

Dr. Krug said he related the case because he believed recovery from secondary laparotomy for intestinal occlusion was extremely rare, although he had not had time to look up the literature. He would be glad to hear the experience of other gentlemen.

Dr. G. M. TUTTLE could recall two cases in which he had performed secondary laparotomy for intestinal obstruction, from one of which he had presented the specimen to the Society. Both were fatal.

There was a point or two in connection with Dr. Krug's case which he thought might be discussed with profit. The first related to the large raw surface, which seemed inevitable on separating extensive adhesions from the posterior surface of the uterus. He had become accustomed to the following method for preventing occlusion through adhesions, a method, however, which had not originated with him: Wherever a raw surface was left in the abdomen he packed about it iodoform gauze, frequently putting in wads half the size of one's head, or even larger, drawing the ends out by the side of the drainage tube. The gauze was gradually withdrawn in from twenty-four to forty-eight hours, the drainage tube being left a little longer for the escape of any fluid which might be left on withdrawing the gauze. The procedure was a little painful, but was justified by the fact that cases which before were attended by symptoms giving rise to anxiety, under this treatment ran an uneventful course. The method was largely in use among general surgeons; he had seen Dr. McBurney employ it in operations for perityphlitis, packing the intestines away from the raw surfaces on the peritoneum by gauze containing a slight amount of iodoform.

The other point which had impressed itself upon him was the use of laxatives in the manner described. He thought that a seidlitz powder given before and after the anesthetic must be very trying to the patient's stomach. During the past year they had had in Roosevelt Hospital a large number of cases of pyo-salpinx which had run an uncomplicated course, with no deaths, yet the after-treatment had been simple in the extreme. The stomach was left at rest until an indication for a laxative arose, then, following the suggestion of Dr. Cleveland, they administered small doses of calomel, which was less irritating to the stomach than salines.

He thought Dr. Krug deserved to be congratulated on the success of the secondary operation. While similar cases were on record, the number was very small.

Dr. EGBERT H. GRANDIN thought a point in the history of Dr. Krug's case which was worthy of note was the peculiar

character of the pulse. This had formed a diagnostic symptom of value in the beginning of the trouble. Had his attention been called as forcibly last summer as it had been to-night to the value of a rapid pulse in the diagnosis of possible intestinal obstruction, he would have been able to relate a case of secondary laparotomy successful instead of fatal, the primary operation having been performed by a cow. The presence of a rapid pulse and tympanites, although there was absence of temperature elevation, were symptoms of grave import after laparotomy and in puerperal cases; they meant that there was very likely septicemia, due in Dr. Krug's case to poisoning of the general system by absorption of fecal matter in the occluded intestine. Whenever there was elevation of the pulse, although the temperature was normal, he felt troubled about his patient. In the case to which he referred, secondary laparotomy was performed for intestinal occlusion, but too late. He proposed reporting the case later in full, in view of the fact that cattle-horn lacerations of the abdomen were not specially common.

DR. KRUG said, in closing the discussion, that he wished only to say a word in favor of the early administration of laxatives. This had been the first case of intestinal occlusion which had occurred in a long time in his practice, after a good many laparatomies, and it was his custom to give a laxative before putting the patient under an anesthetic. There had been very little vomiting, very little gastric trouble. When he could do so, he gave salines a full week before operating, and caused the bowels to move as soon after the operation as he could, because he thought it prevented obstruction. The bowels were not so likely to become adherent to raw surfaces as when nothing was done. Then salines caused the absorption of lymph, which furnished too good a medium for the development of germs. He did not think their use had anything to do with causing the occlusion in the case just related.

APPENDICITIS.

DR. WILLIAM M. POLK presented an appendix vermiformis which had been discharged through an incision made early, and which disclosed a collection of pus. The specimen formed the basis of some remarks favoring an early tentative operation. He took it that the question at issue in appendicitis was whether to operate early, for opinions agreed on the propriety of operating when the diagnosis of pus could be clearly made. But whether to operate early was a question of grave moment both to the surgeon and general practitioner, for the reason, he said, that so many cases which seemed very simple during the first three or four days, subsequently developed serious symp-

toms and terminated fatally. If, then, some method of operating early could be devised without adding to the mortality rate, it should receive general acceptance.

He believed that when the appendix became diseased the condition of the patient determined to some extent the character and amount of the exudation which was to surround it. But we were unable in a given case to say whether the patient would or would not be able to encapsulate the point of inflammation. Therefore many were in favor of an early operation. This, however, was a serious procedure—serious mainly because there was no chance to prepare the patient for it. As a rule, patients were seen when in a condition very different from that of those who were about to receive radical treatment for an ovarian tumor or pyo-salpinx, the condition of the bowels favoring peritonitis.

Given a case of appendicitis, its termination would depend largely upon the direction which the inflammation took. Observation, he thought, proved that this was toward the point of least resistance. If, owing to the poor character of the surrounding lymph, the point of least resistance should be toward the general peritoneal cavity, there it would go. If, on the other hand, the fecal extravasation was slow, and the lymph formation was strong and took place promptly, the point of least resistance would be toward the outer surface.

He believed we could, to a certain extent, determine that point of least resistance by making an incision—an incision which did not necessarily amount to extensive invasion of the peritoneal cavity, as might be required for the radical removal of the diseased process.

To illustrate the point he related the history of a case. It was that of a lady whose general condition was not very good, for the reason that she had but shortly recovered from an attack of sepsis arising from an injury to the tendons of a finger. She was seized with symptoms of perityphlitis early Wednesday morning. On Friday she had a chill, with a temperature of 102° , and had a spot of induration in the right iliac region, rather clearly defined on deep pressure made under an anesthetic. Dr. Polk, on Saturday, made an incision directly over this point—which happened to be low—reached the peritoneum, then introduced a needle and found pus. The incision was enlarged, the pus cavity was washed out thoroughly and drained. Amongst the detritus which came away on the sixth day was the appendix. She had no further trouble after the operation, and it was needless to say, he thought, that the operation in no way interfered with the layer of lymph which had been thrown out; so that, so far as the general peritoneal cavity was concerned, it was quite as safe after the operation as before. In fact, it was safer, for

he had relieved all tension on the peritoneum, and had given every opportunity for the escape of pus in the direction desired.

He said he knew, however, that the appendix was not always as favorably situated as in this case. In one case in which he operated on the fourth day he found it down in the pelvis, and the search which was necessary to get at it was so difficult, the intestines were so distended with gas and kept protruding, that much shock was added to the patient's low condition, and the result proved disastrous. But this situation of the appendix was by no means so common as the more favorable one present in the other and successful case.

He was aware that this operation was an incomplete one, and for that reason was open to criticism, as all incomplete procedures were. It meant a long convalescence, and there was always a possibility of some concretions remaining. Still, when we remembered the great danger attending cases when left alone, and the comparative freedom from danger of this partial procedure which had for its main object relieving the peritoneal side of the exudation from tension, it seemed to him the method would be found deserving of serious consideration. At any rate, it would enable many to operate in cases in which they would shrink from the complete operation, for which they were totally unprepared.

The speaker said he was aware that this idea had been suggested before, and had received consideration in other societies, yet, with a case on which to found some remarks, he had desired to call attention anew to it.

PARTIAL EXTIRPATION OF THE UTERINE APPENDAGES.

Dr. Polk's second specimen was intended to demonstrate the utility of partial extirpation of the uterine appendages. The case was one of double pyo-salpinx, and the parts removed consisted of the tube and ovary removed from the right side, while only the tube was removed on the left side, the ovary being allowed to remain because healthy in appearance. The right ovary contained too many cysts to be saved. The left tube, which was a good deal enlarged, was simply cut off at the usual place, the end, however, not being ligated. A ligature was passed through the fold of the peritoneum, extending between the ovary and tube on the outer edge so as not to interfere with the circulation of the ovary, but so as to control hemorrhage. At the completion of the operation the left ovary rested in position at the side of the uterus, in rather close relation to the stump of the tube. The patient had since done as well as any patient had done after complete extirpation. The question might be asked, Of what use could

such a stump be to the woman? He could only reply that he did not know, further than that she had a good ovary, and with a good ovary might, he supposed, go on menstruating as before. The end of the tube, it was true, might close; he could not say in advance whether it would or would not. At any rate, it was then open, according to theory. Spermatozoa might pass up and produce abdominal pregnancy. However, since our knowledge on this subject was largely theoretical, he thought we were justified in exposing the patient to a risk of that sort in order to insure to her what this woman valued so highly, namely, the functional activity peculiar to her sex. He desired an expression from the members as to the value of the different lines of work in partial extirpation of the uterine appendages.

DR. H. C. COE said that one of the patients on whom Dr. Polk had performed a conservative operation, according to her statement, had later come under his care. She had become pregnant a month after recovery from the operation, and miscarried a few months later.

VAGINO-LAPARO-HYSTERECTOMY FOR CANCER.

THE PRESIDENT presented two specimens. The first was a uterus which he had removed on the 30th of May last at the Skin and Cancer Hospital from a woman, age 47, who had had a rather profuse flow during the preceding six months, and who had recently been curetted in Brooklyn. Although married, she had never had children. The vagina was very long. The uterus was long, but not much enlarged; it was sharply retroflexed. He concluded there was pretty thorough carcinomatous infiltration of the interior of the uterus, and advised vaginal hysterectomy. The vagina being so long and narrow rendered the operation very difficult. However, the left broad ligament was caught by his long forceps (a modification of the Spencer Wells forceps), which controlled the hemorrhage perfectly; but after clamping and dividing the right broad ligament there was a good deal of bleeding from a point which he was unable to catch up, and he did not think it at all safe to introduce a tampon and trust to it to control hemorrhage. Consequently he opened the abdomen and was able to pass his fingers down and at once catch the broad ligament, ligate it, and control the hemorrhage. The patient made an excellent recovery, and is at present date in perfect health. The examination showed that the disease had been about equally distributed throughout the entire uterine cavity. The cervix was not involved at all. Microscopical examination showed the disease to be carcinoma.

PRIMARY CARCINOMA OF THE BLADDER.

The second specimen presented by the President consisted of enuretings removed about two weeks ago from the bladder of a widow, 60 years of age, whom he saw in consultation while in the country. The history stated that early in the summer she began to have a considerable discharge of blood from the urethra. Her physician had examined her for stone, but found none. She continued to get worse, the amount of blood increased rather than diminished, the pain increased, and she emaciated rapidly. Dr. Janvrin examined her carefully, at first without ether, using the sound and bimanual palpation. The uterus and other sexual organs were atrophied, but the posterior wall and fundus of the bladder could be felt considerably thickened and sensitive to the touch. Believing there was a malignant deposit, he anesthetized the patient, dilated the urethra slightly, and with a dull curette scraped out the granulations, which afterward were pronounced by the pathologist to be undoubtedly "villous carcinoma" of the bladder. It was the first case which he had seen in which carcinoma started primarily in the bladder. He had seen a great many cases of infiltration extending to the bladder from the uterus, etc.

DR. CLEMENT CLEVELAND having inquired how large an opening it was necessary to make into the abdominal walls in the first case, the PRESIDENT replied: "A very small one—large enough to insert only two fingers—and in a few moments he was able, manipulating the forceps per vaginam with the other hand, to pass them farther up on to the broad ligament and control the hemorrhage, so that afterward no oozing took place."

DR. CLEVELAND said he had had a case somewhat similar to the last one related by the President. The woman, about 45 years of age, had complained of a great many symptoms, and it was somewhat difficult to make a diagnosis; but she remained under his care for some time, and at last, while making examination by the vagina, he felt a mass in the bladder. Then making an artificial fistula, he introduced his finger into the viscus and discovered on its anterior wall a large, nodular, cancerous mass. The nodule grew larger, the woman became worse, cancer developed elsewhere, and she died. The fistula was kept open for the passage of the urine, which gave the patient much relief. It was the only case in which he had seen cancer start in the bladder.

DR. R. A. MURRAY inquired of the President how long hematuria had lasted, and received the reply that it had existed about three months and a half. Dr. Murray then asked whether hematuria was not a very early symptom in primary

cancer of the bladder, it being due to congestion of the mucous membrane as well as to breaking down of granulations. Blood might be present in the urine for some time, due to congestion, while granulations on which to base a diagnosis might not appear until later. He had seen this point made in some German periodical, the name of which he could not recall. He had seen a number of cases of hematuria the last two years, in one of which the patient had been seen by five physicians, another by six, yet in none had the cause of the hematuria been determined. Careful microscopic examination of the urine had been made in three of the cases.

THE PRESIDENT added that in his case he examined the urine on the morning of the operation (the first and only time he had seen the patient), and it contained a considerable amount of albumin; her physician had found it several times during the summer. Yet he did not think there was disease of the kidneys. He could offer no explanation.

DR. POLK inquired how many forceps had been used in the President's first case.

THE PRESIDENT said he used only two of his long forceps, and added that, as a rule, he had had no difficulty in applying these forceps to the first broad ligament. But he had frequently been obliged, after having applied the second pair to the last broad ligament, to apply one or more other pairs. In one case, operated upon at about the same time as the case just reported, he applied six pairs altogether, but on the broad ligament, which he first cut, and which with him is usually the left, there was but one pair.

DR. POLK said he was convinced no rule could be laid down for the application of forceps in these cases. If there were a large vagina, with a thin vaginal roof and movable uterus, the chances were that two forceps would be quite sufficient. But if the vagina were narrow, the patient fat, the roof of the vagina thick, the chances were that if one attempted to do the operation with only four or six forceps he would fail; he would find the vagina full of forceps, while afraid to let go any one lest there should be a fresh escape of blood. He thought, therefore, that in cases of that kind the use of forceps would ultimately be limited to the broad ligament proper, if used at all, while the vaginal connection of the uterus, which included the base of the broad ligament, would have to be cared for by ligature, as affording the safest, quickest, and best way of meeting the demands of such cases.

DR. H. C. COE inquired of the President his experience as to recurrence after hysterectomy for cancer of the body of the uterus.

THE PRESIDENT said he expected soon to put his experience

in the form of statistics, but he could say in a general way that thus far it had been extremely favorable. This might be accounted for by the fact that he had been able to operate early.

DR. COE said the question was suggested by the fact that in one of his most favorable cases of cancer of the body of the uterus, operated upon last January, the patient was now nearly moribund. The disease had returned in the lumbar glands. Another, operated upon about a year ago, also showed recurrence. They were considered favorable cases for operation, there being no evidence of secondary trouble, the uterus very movable, the operation performed early, yet there had been recurrence.

DR. J. H. FRUITNIGHT read a paper,

HYPEREMESIS GRAVIDARUM AS AN INDICATION FOR THE
PRODUCTION OF PREMATURE LABOR.¹

DR. G. M. TUTTLE said this subject had been uppermost in his mind the past week, and therefore it was with no small interest that he had listened to the paper. Almost immediately on his return from his vacation he was met by the news that one of his patients, a woman of about 28, was in a very critical condition with hyperemesis gravidarum. From his assistant, Dr. Locke, he learned that she had passed a little beyond the third month of pregnancy. She had borne a child four or five years ago, at which time Dr. Tuttle was not her attendant; some puerperal trouble followed, and she had phlebitis of the right leg which troubled her over a year. She was, indeed, very ill, but had been singularly vigorous and strong up to that time. Almost immediately after her last conception, which was about three and a half months ago, vomiting began. It resisted every line of treatment which could be thought of, including general and local measures. Dr. Locke did not feel justified, however, in going further than to cause moderate dilatation of the cervix, in the absence of her regular physician. It should be stated that the patient was in a village ninety miles distant from New York.

On his return Dr. Tuttle was informed that she had suddenly become very much worse. Going at once, he found her completely changed, and reduced from a normal weight of 150 pounds to the extreme degree of emaciation. The week preceding his arrival she had vomited once every ten minutes; she had not been observed to sleep night or day; the stomach rejected everything; an inch of the rectum protruded; the nose and ears were cool; the legs cold from the knees down;

¹ See original article, page 1351

the pulse from 130 to 150 or more ; she was approaching profound collapse. He immediately made up his mind that but one thing could save the woman's life, and, having seen one patient die in Roosevelt Hospital undelivered, he began at once to consider how best to deliver her. He gave chloroform, introduced a Goodell dilator, dilated the cervix rather widely, passed the curette in between the decidua vera and decidua reflexa, put in three tupelo tents and left them in over night. The patient was suffering from a peculiar reflex cough, short and hacking, reminding one of a suffocating bronchitis. It was followed every two or three minutes by vomiting of a very dark brown, musty, sour-smelling fluid which had a faint fecal odor. After leaving the tents in twenty-four hours he went back, and, although having able assistance, he still hesitated how best to deliver the patient of a child between the third and fourth months while she was in so critical a condition. Believing, however, that if he delayed long the woman would not live, he proceeded very cautiously to administer chloroform, and removed the tents. The cervix was about the size of a silver twenty-five-cent piece. The uterus was hard. His theory was that there had been failure of proper expansion of the uterus because of the previous phlebitis, for there was certainly lack of proportion between the size of the fetus and the growth of the uterus. He managed, however, to dismember the child, take away the placenta, and curette the uterus. There was no response to the irritation on the part of the uterus. The cavity was first washed out with a weak solution of corrosive sublimate, then with a very weak solution of iodine, and finally the uterus and vagina packed lightly with iodoform gauze.

About two hours afterwards the woman vomited over a quart of liquid feces of bright yellow color ; continued to vomit fecal matter fully an hour ; the pulse sank, becoming scarcely perceptible ; the general condition was almost desperate. Within the next twenty-four hours, however, the vomiting ceased almost entirely, and the woman, at present, was taking two or three quarts of milk a day, and was out of danger.

The speaker was, therefore, in sympathy with the suggestion contained in the paper, to make this desperate effort to save the woman, even though her condition had become critical.

Dr. COE thought the difficulty lay in determining when the vomiting had become uncontrollable. He could distinctly recall the case of a young unmarried woman in whom the vomiting could be controlled by keeping her on her back, but as soon as she made the least attempt to rise the vomiting would again become uncontrollable. He kept her in the dor-

sal position two months, when she became very weak and emaciated. Dr. Draper then saw her with him, and advised, in case she did not get better within a day or two, induction of premature labor. (But she did improve and had an easy confinement.)

He was once called by a friend at midnight to see a patient on whom labor had been induced by a prominent obstetrician for uncontrollable vomiting. But it was too late, for the woman died soon after his visit. The case made a strong impression on him, for he resolved not to wait in similar cases for extreme emaciation before inducing labor. This woman had become so exhausted that she could not withstand the slight shock caused by the abortion and moderate loss of blood.

DR. A. H. BUCKMASTER said he saw the commencement and ending of a fatal case some years ago when interne in one of the hospitals. The case was supposed to be one of vomiting due to ulcer of the stomach, and was under treatment two months, when the patient died. She was a governess in a most respectable family. In making the autopsy they found a five-months fetus, with no ulcer whatever, nothing to account for death except the uncontrollable vomiting.

DR. KRUG said he had seen a case last winter very similar to that of Dr. Tuttle, except that it had a different ending. Before coming under his care she had been treated by all known means by a prominent physician of the city. She was in a state of marked emaciation, and he hardly expected a good result from abortion, but decided that that procedure offered the last hope. He dilated the os, and at the same sitting dismembered the fetus and removed all membranes. The operation was quite difficult and lasted about fifty minutes. There was very little bleeding. The patient stopped vomiting as soon as the contents of the uterus were removed, but died twenty-four hours afterward of exhaustion. He could strongly indorse the recommendation in the paper not to wait too long. But, as Dr. Coe had stated, it was very difficult to say just when vomiting had become uncontrollable. Replying to a question, he said his patient was in the fourth month of pregnancy.

DR. E. H. GRANDIN remarked that all seemed to agree that Dr. Fruitnight has taken the right stand. For himself, he was thoroughly in accord with the conclusions stated in the paper, or those in favor of emptying the uterus in cases of the kind related. Reported cases taught us that this was the only way in which to save the woman.

But the question arose, when to empty the uterus. If we waited too long we would add the shock of an abortion to that in which the woman already found herself from long waiting, and the probability was that her life would be lost.

His rule of practice would be this: He would try drugs, on only few of which did he place any reliance, chloral and cocaine being the principal ones; he would correct any existing displacement of the uterus, and gently stretch the cervix after Copeman's method. Such measures failing, the patient gradually getting weaker, the pulse accelerated, he would at once counsel induction of premature labor or abortion. In these cases the child could not be taken into account at all. The woman's safety alone was to be considered. At least fifty per cent of the women died if abortion were put off too long.

Dr. Grandin said he had seen cases similar to the one narrated by Dr. Coe, but only one of what he called pernicious vomiting. This was two years ago and occurred in consultation in a case of six months' pregnancy. The patient had just passed into the hands of the physician who called him with regard to the advisability of inducing labor. When Dr. Grandin saw the patient she was emaciated to an extreme degree, the pulse had a range up to 160, the temperature was 102° F., and in general the patient was in much the condition described by Dr. Tuttle. She had not retained anything on the stomach for weeks, and her rectum had become intolerant to everything. There was, therefore, but one thing to do, namely, to empty the uterus. This was done after a slow manner, for the reason that the case occurred out of town and he had not the instruments necessary for rapid delivery. Within twenty-four hours afterward the patient ceased to vomit.

In closing his remarks Dr. Grandin referred to the probable etiology of pernicious vomiting of pregnancy. Why did the vomiting cease after the uterus had been emptied? He ventured to suggest that the cause was an ovarian neurosis, so-called; that is to say, to pressure on unusually hyperæsthetic ovaries. This view would be suggested by Dr. Coe's case, which showed that the physiological vomiting of pregnancy could be palliated by teaching the patient to assume the genupectoral position before rising and as often during the day as necessary. He would explain the vomiting of pregnancy, then, by the fact that during the early months the uterus lay low in the pelvis and pressed on the ovaries; at the third month, when the vomiting usually ceased, the uterus rose above the pelvic brim. In cases of pernicious vomiting it was possible the ovaries were either enlarged through disease or had become impacted between the pelvic brim and the lower uterine segment. He threw out these suggestions in order to call forth criticism.

Dr. G. T. HARRISON said he was in hearty accord with the reader of the paper in regard to the position he had assumed, and he agreed with Dr. Coe that there was no other class of cases which called for the exercise of the judicial faculty to a

higher degree. He related a case which he saw in consultation with his friend Dr. Lindsey. The patient had apparently uncontrollable vomiting, yet he was not willing to consent to interruption of the pregnancy until all means at relief had been exhausted. He insisted on the use of Copeman's method of dilatation of the cervix. Dr. Lindsey carried out his suggestion, but it had no effect, nor in fact had Dr. Harrison ever seen any benefit from it in cases which had come under his observation. The husband being very much alarmed about his wife's condition, the late Dr. J. B. Hunter was also called in consultation. He felt that at that time it was absolutely necessary, in order to save the woman, to interrupt the pregnancy, which he did, with a very happy result. Dr. Harrison had occasion to see this patient for the same condition during another pregnancy, in consultation with Dr. Lindsey. Knowing her previous history, it was not long before he reached the conclusion that pregnancy must be interrupted.

As to the theory offered by Dr. Grandin in explanation of these cases, he had no doubt but what it might be true in a certain class of cases, but it did not apply to all.

In one case which he saw with Dr. Lindsey, and in which Dr. Thomas was also added to the consultation, he was convinced that the vomiting was due to peritoneal irritation, for the woman had a complicating perimetritis and the uterus was more or less bound down, so that he thought there was no doubt but what the stretching of false bands had had a good deal to do in producing peritoneal irritation and the reflex phenomena. At least he considered that just as plausible an explanation as that offered by Dr. Grandin. Moreover, there were a number of cases in which it seemed endometritis was the cause, while in others the cause seemed to be in the passive distention of the uterus preponderating over the active growth of the organ—for instance, in cases of twins and hydramnios.

In one case of vomiting in which he was consulted during the latter part of pregnancy, and it was deemed advisable to bring on labor, labor pains came on naturally, the cervix dilated, he delivered the woman, and she made a good recovery, although she had been near the point of death.

DR. R. A. MURRAY had been much interested in the paper, because, like others present, he said he had seen a number of cases of uncontrollable vomiting, and the question had been what to do. If a cause could be found for the vomiting, it could generally be relieved; but he now referred to those cases which might be called idiopathic, in which nothing would give relief except the interruption of pregnancy. The question was not as to the propriety of interrupting pregnancy in

proper cases, but as to when it should be done; for certainly, when postponed too long, death was apt to result. He was disposed to think that in most cases, if we made a search, the cause of the vomiting could be found, for vomiting did not arise without a reason. But having in a given case gone through the list of probable causes, and being able to find none, when the patient had a high temperature, or, as was more frequently the case, a rapid pulse, a dry tongue, and want of nutrition, and very frequently a slight diarrhea, the physician should not wait longer until emaciation became marked, but should proceed at once to interrupt the pregnancy, otherwise the period would soon be reached when it would be useless. He thought Dr. Harrison had struck the keynote as to the cause of the vomiting in many cases, when he mentioned peritonitis and its resulting adhesions, and congestion of the uterus. All were familiar with the fact that where there were fibroids of the uterus vomiting was easily excited. Mere congestion of the uterus, and distention of the glands of the cervix, causing them to shine like pearls through the mucous membrane, were common causes of vomiting in pregnancy. That mere congestion of the uterus would in some cases cause vomiting was demonstrated by the fact that, where he had found the cervix enlarged and congested, drawing a little blood had brought relief more frequently than anything else. Personally he had obtained little benefit from dilating the cervix, except in one case which went on to miscarriage—something which it was desired to avoid. Except where peritoneal adhesions were the cause of the vomiting, the uterus being fixed and adherent, he thought little benefit would result from nitrate of silver and local applications. The condition of the kidneys should also be inquired into. But if, after making careful search, no cause could be found for the vomiting, this being persistent and the pulse having become rapid, he would counsel emptying the uterus. This could be readily accomplished in the manner Dr. Tuttle had suggested—distending the cervix with the dilator, introducing tents until the canal was large enough to introduce a finger, then passing up the forceps, the ordinary long Simpson's, crushing the fetus, and quickly delivering. He had done this three or four times in cases of placenta previa, and a number of times in cases of vomiting, experiencing no trouble.

It was important not to let the patient become so low that she could not take an anesthetic. Without an anesthetic one could never be sure that he had complete control of the uterus and its contents. In their emaciated state these patients were very liable to sepsis.

A NEW RHEOSTAT.

DR. A. H. GOELET said that in using electricity he had found it very inconvenient, as well as unpleasant to the patient, to turn on the current cell by cell, and he had therefore devised a simple rheostat, small enough to be carried in the pocket, to use on the acid battery or when one wished to treat the patient at her home. It can be used also on any cabinet battery, and was in reality a modification of the Butler rheostat which had been devised in 1880. He compared it with the Massey controller, which was a modification of the same instrument, but unhandy to carry. His own consisted of a disc of marbleized slate, with raised circular surface about one-third of an inch wide and about one-third of an inch thick, the raised surface being leaded with an ordinary lead pencil. The thicker this coating is made the better the conduction, and in this way the resistance can be regulated.

The speaker had for some time been using the faradic current also through the rheostat, and had found it much more pleasant to the patient. The current could thus be increased not only more gradually, but even more rapidly; that is, the entire force of the current could be turned on more smoothly than by pushing the secondary coil over the primary, and in patients of delicate nervous organization this plan of using the faradic current presents a great advantage.

At the annual meeting of the New York Obstetrical Society, held October 21st, 1890, the following officers were elected:

President, DR. JOSEPH E. JANVRIN.

First Vice-President, DR. HENRY C. COE.

Second Vice-President, DR. ROBERT A. MURRAY.

Recording Secretary, DR. ARTHUR M. JACOBUS.

Assistant Secretary, DR. JAMES R. GOFFE.

Corresponding Secretary, DR. AUGUSTUS H. BUCKMASTER.

Treasurer, DR. J. LEE MORRILL.

Pathologist, DR. CALVIN T. ADAMS.

TRANSACTIONS OF THE OBSTETRICAL
SOCIETY OF CINCINNATI.

Regular Meeting, April 10th, 1890.

The President, DR. W. H. WENNING, in the Chair.

DR. BYRON STANTON reported

TWO CASES OF INDUCED LABOR.

In an article on the subject of induced premature labor which I read before the American Association of Obstetricians and Gynecologists in September, 1888, I reported the case of a woman of small frame, with a pelvis contracted to a moderate degree, who had been delivered of two still-born children of unusual size. In the first labor, craniotomy was performed after the death of the fetus; and in the second, version was resorted to after failure to deliver with forceps, but, owing to the large size of the child and the diminished size of the pelvis, delivery of a living child was not effected. In a third pregnancy labor was induced by Krause's method—the introduction and retention of a bougie between the membranes and uterine wall soon after the completion of the seventh month. Labor pains came on in ten hours after the introduction of the bougie, and in six hours delivery of a child weighing five and one-half pounds was safely accomplished. Both mother and child did well.

In August, 1889, this patient being again pregnant, it was determined, on consultation with Prof. W. B. Davis, the family physician, to again resort to the operation of inducing labor. The preceding delivery having been an easy one, it was thought that the operation might be deferred until a later period. Accordingly, soon after seven and one-half months the same method was resorted to. The bowels having been freely evacuated, a vaginal injection was administered and a bougie introduced at four o'clock in the afternoon of August 26th. No pain having been felt in twenty-four hours, the bougie was removed for the purpose of introducing a larger one. On its removal it was found that the instrument had been bent upon itself, so that it reached but a short distance above the internal os. This, no doubt, accounted for the failure to excite uterine action. A larger one was introduced with a better result, and on the morning of the 28th, about fourteen hours after the introduction of the second bougie,

labor pains supervened. The labor progressed slowly until the head was low down in the pelvis, when all progress ceased and the delivery was completed with forceps. The child is as hearty and robust as the average.

CASE II.—On March 19th, 1890, I was called to see Mrs. S., a multipara, who was six and one-half months advanced in her fifth pregnancy. She was having a uterine hemorrhage, which came on soon after arising. An examination revealed a placenta previa. The patient was kept quiet, and the usual remedies for such hemorrhage administered, and the bleeding soon ceased.

Her last menstruation ceased September 3d; the time of expected confinement, about the 10th of June. As the fetus had not yet reached the period of viability, I determined not to interfere, but to watch the patient closely, and on the recurrence of hemorrhage at any time after the completion of the seventh month, to induce labor.

No further bleeding occurred until the morning of April 17th. I was soon at her bedside, and on examination found that the placenta was attached principally to the posterior wall of the uterus, the anterior margin overlying the os and extending a short distance up the anterior wall. A bougie was passed up along the anterior wall and the vagina tightly tamponed. This was about 7 A.M. About noon labor pains came on and rapidly increased in severity. At 4 o'clock, the hemorrhage having increased, the vaginal plug was removed for examination, with the intention of introducing a Barnes' dilator. The examination showed that the fetus presented transversely, and the os was so much dilated that by combined external and internal manipulation the breech was reached and one leg was brought down. Sufficient traction was made to prevent hemorrhage, and delivery was effected without the loss of much more blood. The child was fed with diluted milk until lactation was established. It did well for a time, but after a few days it began to fail, and died on the twelfth day after birth.

The induction of premature labor—once a subject of much controversy—is now more frequently resorted to than formerly, there being a more general consensus of opinion as to the conditions which justify this procedure and as to the methods of induction. In regard to the propriety of the operation in cases of placenta previa after the period of viability is reached, there is very little difference of opinion. Before that period, if the patient can be closely watched, I think it should be deferred until there is a chance to save the child.

There are many methods of inducing labor, and it is not a matter of indifference what means are resorted to to excite ute-

rine action. Some act by influencing the general system, some by reflex irritation, and a third class by their direct influence upon the uterus.

Of the first class, ergot formerly stood at the head in favor, but pilocarpine is now more frequently resorted to than any other drug. Quinine, rue, cotton root, and some other articles are named as oxytocics. These are all of them uncertain, some of them dangerous to both mother and child, and some are productive of great distress, especially pilocarpine. This class is not now generally used and should be abandoned. Ergot may be dismissed with the statement that it has no place whatever in obstetric practice before the end of the second stage of labor. Quinine may increase uterine action when started, but cannot induce it.

Of the second class—those which stimulate the womb by reflex action—but little need be said. Mammary stimulation and abdominal friction are the methods generally mentioned, but the former is painful, and both are so uncertain that they need only be mentioned to be condemned.

In the third class of agents we will find more to commend, but many of the methods of inducing action by direct uterine stimulation are attended with danger, and many of them are uncertain or tedious.

The different forms of electrical excitation—galvanism, faradism, and electro-magnetism—have been tried, oftener without success than with it. Electricity, by whatever means applied, is very uncertain in any amount that can be used without danger to the child.

The method generally had recourse to fifty years ago was rupture of the membranes. Some advocated the sudden evacuation of the liquor amnii, others its gradual withdrawal by means of a high puncture. These means never failed to excite uterine action, but any means that depends upon removal of the liquor amnii, or in the use of which there is great danger of rupture of the membranes, is to be condemned for reasons so well understood that I need not dwell upon them.

Direct stimulation of the os by pressure has been resorted to. Hunter inserted into the vagina a bladder which he afterward filled with water. Schoeller, of Berlin, proposed the use of pledgets of lint or cotton in the vagina for the same purpose; and in cases where labor is induced because of placenta previa, this method is to be recommended, though it is advisable to use some other method with it to expedite matters, because it is uncertain and tedious in its action and so likely to become painful.

The use of sponge tents to dilate the os and at the same time stimulate the uterus to contraction is a speedy method, but tents are attended with so much danger of septic infection

that they should not be used for this purpose. If the cervical canal is to be dilated, do it by some other means; if a tampon is wanted, a vaginal tampon is safer. This method is commonly spoken of as Kluge's, because he first practised it, though Berninghausen was the first to suggest it. Barnes suggested dilatation by fluid pressure by means of rubber bags introduced into the os and injected with water. These are free from the dangers which attend the use of sponge tents, and are especially applicable in cases where there is hemorrhage. They will find a place in many cases to expedite labor after uterine action has been started by other methods.

The use of the douche directed against the os tincæ, first practised by Kiwisch, whose name this method bears, is slow in its action and sometimes fails, but a more serious objection to it is that it is not free from danger, several deaths having been attributed to its use.

The injection of a small amount of water between the membranes and the uterus by means of a syringe, known as Cohen's method, is generally prompt in action, but sometimes requires repetition. It acts by separating the membranes, which excites uterine contraction. The injection of air or carbonic acid gas has been suggested for the same purpose. The same object may be more safely accomplished by the method suggested by Hamilton, viz., sweeping the finger around the lower part of the uterus to separate the membranes, or by a bougie as recommended by Mamepe. These methods, with the exception of the intra-uterine injections, are generally safe if care is taken not to rupture the membranes, but the time in which action is excited is uncertain.

The method suggested by Lehmann, of passing a bougie eight or ten inches into the uterus between the membranes and uterine walls, acts in the same way as Hamilton's or Mamepe's, by the separation of the membranes. Like them it is uncertain, the operation sometimes having to be repeated a number of times. This operation, however, led to a method known as Krause's, which consists in the introduction and retention of a flexible catheter or bougie—a method that seldom fails and is generally regarded as the safest and best. Care must be taken to pass the instrument as high into the cavity of the uterus as possible, and to avoid rupturing the membranes. In case uterine action is not excited in twenty-four hours, the instrument should be withdrawn. Its shape will show the direction which it took in the uterus, and, if faulty, on the introduction of a larger one a better direction may be given it. This I believe to be by far the best mode of inducing labor.

This résumé does not include all of the methods that have been suggested, but these are the principal ones. We see

that all that are regarded as safe are more or less uncertain in their action, some failing altogether in some cases, others being uncertain in the time in which uterine action is awakened. The excitability of the uterus varies greatly, and on the degree of excitability will depend the failure or success in any case.

In both of the cases reported this evening unusual precautions in regard to the care of the infant were observed. The *couveruse*, for the use of which I am indebted to Dr. Taylor, was used with the greatest satisfaction. The ease and certainty with which a uniformly high temperature can be maintained by this means make it a very important addition to the furniture of the obstetric chamber in cases of premature birth, by sparing the occupants of the room much discomfort and rendering the task of the nurse more easy and agreeable, and success in the rearing of the child much more certain.

DR. C. D. PALMER thoroughly agreed with Dr. Stanton that the means recommended by him to induce a premature labor was the very best of all the means which have been utilized. It was not only generally thoroughly efficacious, but it was safe. He had never employed any other means, and had as yet never failed to induce, first, uterine contractions, then gradual dilatation in from twelve to twenty-four hours. Rarely is it necessary to insert a larger bougie and in another location, but this alternative should be employed if the first introduction fails to induce normal uterine contractions.

The methods of determining the size of the pelvis in its obstetric channel were always faulty and in the main unsatisfactory. It is one thing to fairly estimate the size of the interior of the true pelvis during and after an act at parturition, and another matter to correctly measure the pelvis in the last of the first pregnancy. The fact that a woman tells us that a previous accouchement or accouchements have been very long, tedious, and painful, completed only after the application of the forceps, podalic version, craniotomy, or the Cesarean section, must make any educated obstetrician strongly suspicious that the construction of the pelvis is at fault. Unfortunately, every now and then we encounter a case with no clinical obstetrical history. We see the case for the first time in the first pregnancy or the first parturition, and the exterior appearances give no suspicion of any abnormalities. This is particularly true of the justo-minor pelvis, by no means an uncommon form of pelvic deformity.

Within a few days the speaker, in his rounds at the Cincinnati Hospital, had his attention drawn by one of the internes to a woman, some eight months pregnant, who was but

4 feet $8\frac{1}{4}$ inches in height. It was her first pregnancy, and she, of course, had no obstetric history to give us. Merely suspecting that the pelvis was contracted, external pelvimetry was practised by Baudelocque's pelvimeter, and internal measurements sought by the finger of the right hand. The following measurements were made: 1st, between the two anterior superior spinous processes, $9\frac{1}{4}$ inches; 2d, between the crests of two ilia, $9\frac{1}{2}$ inches; 3d, external antero-posterior, $7\frac{1}{2}$ inches. As these diameters, for an average, were respectively $9\frac{1}{2}$, $10\frac{1}{2}$, and $7\frac{1}{2}$ inches, the above-mentioned measurements indicated that the transverse and oblique diameters of the pelvic brim must be in a measure abridged, and the conjugate of the brim probably also. The coccyx was not ossified to the sacrum, but as the vagina was exceedingly small—as small as any virgin vagina—it was with the greatest difficulty that the promontory of the sacrum could be touched. Knowing that it could not be touched unless the conjugate of the brim was contracted or the hand was inserted into the vagina under anesthesia, the fact that it was reached, although with difficulty, indicated clearly that there must have been some abridgment. I estimated this abridgment to have been at least three-quarters of an inch. Premature labor by the bougie was induced after the use of hot bichloride vaginal injection (1:8,000). Slight contractions were induced in twelve hours. The next morning I reinserted the bougie in another place, and labor was gradually induced that evening, and spontaneously completed the next morning. Dr. Freiberg, the obstetric interne, carefully watched the case and skilfully cared for the perineum, so that the merest superficial laceration occurred. The fetal head diameters were full average; child living and vigorous.

Had labor in this case not been completed spontaneously, especially if the head had not entered from the brim into the pelvic cavity, I would have employed the forceps if the head was disposed to enter, or, if this failed, I would have made podalic version. Possibly craniotomy might have been entertained, although the child was still living; for the knowledge that the child was illegitimate, and the mother's life of chief importance, were considerations, to my mind, worthy of attention.

Unquestionably, had premature labor not been induced in this case, and pregnancy been allowed to go on until full term, this parturition would have been extremely difficult, only completed with a dead fetus, by forceps, podalic version, or possibly craniotomy.

DR. RUFUS HALL said that, in reference to the justifiability of craniotomy in these cases, he had no doubt the gentlemen would do what was right. He then related a case in

which craniotomy was done upon a living child weighing $6\frac{1}{2}$ pounds. This patient had previously been delivered of a dead child weighing 6 pounds, and later of a living child weighing 8 pounds. He speaks of this simply to show how reckless some men are. More need not be said. This, however, has prejudiced him against the operation. He would not do it except in extreme cases. Does not think a Porro operation has a good chance after forceps have been applied; it should be resorted to only in extreme cases, and no other manipulation should *precede it*. Always use bougie to induce premature labor, with antiseptic precautions.

DR. AUGUSTUS J. WOODWARD, of Atlanta, Ga., submitted the following

DESCRIPTION OF A NEW CLAMP FOR THE AXIS-TRACTION
FORCEPS.

Some time since, whilst using the Elliot forceps with the Tarnier-Lusk attachments, I became impressed with the belief that an improvement upon the clamp was not only possible but desirable.

Acting upon the idea then presented to my mind, I removed the Tarnier clamp, lengthened the Elliot screw, cutting the thread upon it, which enabled me to bind the handles after the forceps had grasped the head.

The modification may be briefly described as follows: Length, 16 inches, the thread first catching when the handles are $\frac{7}{8}$ inch apart, giving a distance between the ends of the blades of $2\frac{1}{2}$ inches, and fenestra $3\frac{3}{4}$ inches.

The advantages claimed for this modification are that the instrument is more compact, more easily carried and conveniently cleaned, whilst being as efficient as the old clamp.

I cannot but think that those of the profession who give the modified clamp a trial will agree with me in thinking it quite an improvement on the original.

DR. WENNING remarked that although, for the sake of simplicity, it was desirable to combine the traction bars with the ordinary obstetrical forceps, most of the patterns which the speaker had seen lacked the other characteristics of the genuine Tarnier axis-traction forceps, namely, the proper pelvic and cephalic curves.

This criticism also applied to the ordinary Elliot forceps exhibited by the gentleman from Atlanta. The use of the screw at the end of the handles—the function of which the inventor reversed by making it a compression instead of an anti-compression screw, as designed by the original inventor of the Elliot forceps—the speaker regarded with some suspicion, because the leverage brought to bear upon the blades

of the instrument whilst compressing the head of the child, when the ends of the handles were brought together by means of the screw, might prove disastrous to the safety of the child. It must be remembered that all of the various patterns of craniotribes and cranioclasts have the screw bar placed at the end of the handles for the purpose of exerting a powerful compression.

TRANSACTIONS OF THE OBSTETRICAL AND GYNECOLOGICAL SOCIETY OF WASHINGTON.

Stated Meeting, February 21st, 1890.

The President, DR. J. TABER JOHNSON, in the Chair.

DR. HENRY D. FRY read the paper of the evening, on

THE PROPER METHOD OF APPLYING THE OBSTETRIC FORCEPS.¹

DR. KING opened the discussion. He said he thought the subject presented an extremely interesting and instructive one, and one that deserved more attention than it had received.

He referred to a former address in which he spoke of the number of forceps used by a dentist—one for nearly every tooth—while the physician commonly uses one pair of forceps for nearly all cases. This he does not consider right, and he argues, with Dr. Fry, that he should go prepared with several different styles of forceps.

He said that in his reply to Dr. Fry's circular letter he did say he applied the forceps to sides of pelves, but that he qualified this by adding that in some instances the blades would tend to follow the sides of the head of their own accord, when it was best to let them do so.

The application of the instrument to the sides of the head is certainly more scientific than the other method, but is not done so often because of lack of skill or ability on the part of the operator—generally due to lack of ability. When the head is high up above the brim and movable, the application of forceps is difficult and nearly impossible, and version often better. In this country there is not so often cause for use of forceps at the superior strait, from pelvic deformity being rare.

¹ See original article, page 1325.

He spoke of the difficulty in making diagnosis of the position in head presentation where labor has been prolonged and the formation of a *caput succedaneum* has taken place. He advises in these cases the passing the finger up under the pubes, where one can feel where the coronal suture meets the temporal suture. He has by this means made the diagnosis of transverse position in head presentation, and thinks it quite useful in such cases.

Another consideration is that when forceps have been applied to the head, by their pressure the head changes its position. Every obstetrician should have many instruments, and a different instrument should be used for the various positions, sizes of the heads and pelves.

He said he knew that it was possible to compress a child's head with a Simpson's forceps, and cited a case in which there was a tumor of the sacrum, near the sacro-coccygeal articulation, the size of a hen's egg, which interfered with delivery. Simpson's forceps was applied, and by continuous traction the child was delivered—dead, due to the pressure of the forceps.

DR. PRENTISS said that this is a subject that interests the general practitioner as well as the specialist. He doubts if the statistics gathered by Dr. Fry give a fair percentage of the practice in the application of forceps, as these answers are mainly from teachers, and it may be doubted even among those who say they apply them to the sides of the child's head. He always applies them to the side of the pelvis, but he has never had a child born dead from use of forceps, though he has had a number of cases where one blade was applied over the occiput and one over the forehead, also a number where rotation has occurred after the application of the forceps. He always tries to assist nature in these cases. He mentioned a case in which both mother and child eventually recovered, but the child for several days had opisthotonos, due to pressure of one blade on back of the neck. He said until quite recently a doctor used one pair of forceps for almost all obstetrical work, and he ventured to say that nineteen out of twenty practitioners of Washington have only one pair of forceps.

If forceps are always to be applied to the sides of the head, then such obstetrical work would have to be turned over to the specialist, which is not apt to be, though for his part he would be glad to have it so.

DR. KING said of course if the hand is introduced into the vagina, a diagnosis of the position of the head can be made; but this is a somewhat difficult thing to accomplish in the beginning of labor, especially in a primipara. By merely sweeping the finger up in front behind the pubes, you can very readily feel the fontanelle.

DR. J. T. JOHNSON asked Dr. Fry if it were not better to use version in cases where the pelvis is contracted, labor prolonged, and head about the strait.

DR. FRY had little to say in closing the discussion, as his views were fully expressed in the paper just read.

In regard to diagnosing the position of the head before applying forceps, he did not think any one should rely upon sutures and fontanelles as landmarks. There should be absolute certainty in the mind of the operator as regards the position. This was obtained by inserting the finger in the vagina and carefully examining the conformity of the presenting part. The old rule to feel for the ears was an excellent one, and with the patient under ether is easily accomplished. When the head is delayed in the excavation, search for the ear situated anteriorly; when arrested at the inlet, look for the posterior ear, which is usually just above or a little to the side of the sacro-vertebral angle.

REVIEWS.

A TREATISE ON THE DISEASES OF INFANCY AND CHILDHOOD. By J. LEWIS SMITH, M.D., Clinical Professor of Diseases of Children, Bellevue Hospital Medical College; Physician to Charity Hospital, the New York Foundling Asylum, and the New York Infant Asylum; Consulting Physician Nursery and Child's Hospital, etc. *Seventh Edition, revised and enlarged.* Pp. 900; 51 illustrations. Lea Brothers & Co., Philadelphia, 1890.

Dr. Smith's work is so well known and has been so long before the profession that a detailed notice is not necessary. It is sufficient to say that the revision has evidently been carefully done. The most modern methods of treatment and recent investigations into the origin and causation of disease are fully considered, while much material which had become obsolete has been cut out. These changes, together with the addition of many chapters on subjects not before considered, make the volume very complete and practically a new work.

THE SCIENCE AND ART OF OBSTETRICS. By THEOPHILUS PARVIN, M.D., LL.D., Professor of Obstetrics and Diseases of Women and Children in the Jefferson Medical College of Philadelphia, and one of the Obstetricians to the Philadelphia Hospital. *Second Edition, revised and enlarged.* In

one octavo volume of 701 pages, with 239 woodcuts and a colored plate. Lea Brothers & Co., Philadelphia, 1890.

The revision of this exceptionally successful work has been most thoroughly and well done. The few points which it was most possible to criticise in the first edition have been amended, and every chapter has been brought well up to date. The style is smooth and easy, its author's forty years of practical work give the impress of authority, while the references to ancient or quaint beliefs and the origin or meaning of various terms—references which quench the usual dryness of the text book—make its reading more a pleasure than a task.

The work may be described in brief as accurate in statement, sound in teaching, complete but not cumbersome.

B. H. W.

ABSTRACT.

1. OSLER, WILLIAM: TUBERCULAR PERITONITIS (*Johns Hopkins Hospital Reports*, 1890).

I.—GENERAL CONSIDERATIONS.

Anatomically the classifications which have been made of tubercular peritonitis are not altogether satisfactory. It is customary, and correct, to exclude the cases of scattered miliary tubercles in the diffuse infective disease, and also those cases in which the peritoneal surface of tubercular ulcers is alone involved. Practically, the great differences which we see post mortem in this condition result from the situation of, the rate of growth of, and the degree of inflammation accompanying the tubercles, and whether there is much or little exudation—serous, purulent, or hemorrhagic. The anatomical basis in all cases is essentially the same, and the variations which we meet, though distinct and marked, are scarcely sufficient to warrant the elaborate subdivisions of this disease made by certain writers. In reviewing a number of post-mortems in this disease we find that they fall naturally into the following categories: 1. *Acute miliary tuberculosis*, characterized by a sudden onset, a rapid development, and a serous or sero-sanguineous exudation. 2. *Chronic caseous and ulcerating tuberculosis*, characterized by larger tuberculous growths, which tend to caseate and ulcerate, leading often to perforations between the intestinal coils, and a purulent or sero-purulent exudate, often sacculated. 3. *Chronic fibro-tuberculosis*, in which the process may from the outset be subacute, or may represent the final result of the miliary form. There is little or no exudation and the tubercles are hard and pigmented.

There exists the closest analogy between tubercle as we see it on the peritoneum and as it occurs in the lung—the fresh miliary eruption, the caseous, ulcerating masses, and the chronic, fibroid, pigmented nodules may be studied with equal facility in either structure. A few practical points in the morbid anatomy may be mentioned. In many cases the process is entirely local. Thus in five of seventeen cases the condition was confined to the peritoneum. In from 30 to 40 per cent of the cases in woman the Fallopian tubes are found affected. The process is commonly confined to the distal ends, and may be primary—which is usual—or is secondary to the peritoneal involvement. A point, worthy of attention on account of its importance as an aid in diagnosis, is the frequent involvement of the pleura. It is often only a dry pleurisy, occurring most frequently without pulmonary affection, and due to direct extension through the diaphragm. The pericardium is also liable in these cases to be the seat of an adhesive tubercular inflammation. Tubercular peritonitis occurs at all periods of life. It is common in children, in whom it is often associated with intestinal and mesenteric disease. It is most common between the ages of twenty and forty. In old age it is rare, but it may occur even in advanced life. The disease is certainly more prevalent among females. It is stated that the disease is more common in the negro than in the white race.

Clinically it is extremely difficult to make a satisfactory classification of the cases of tubercular peritonitis, and we will here only refer to certain special features in the mode of onset and to peculiar symptoms not, as a rule, very fully discussed. The process may be completely *latent* and the eruption take place so slowly and so painlessly that the patient may not have presented a single symptom of abdominal disease. The condition has thus been met with in the operation for hernia, and more frequently still in association with ovarian tumor. The onset of the symptoms may be *sudden*, so that the diagnosis of enteritis or hernia may be made. This suddenness of onset is very deceptive and usually leads to the diagnosis of a simple acute peritonitis. The disease may set in with pronounced *gastric symptoms* and simulate ulcer or cancer. A more common mistake is confounding tubercular peritonitis with *typhoid fever*, which it may simulate very closely. *Ascites* is a frequent symptom, but it does not, as a rule, become very marked; thus Biat,¹ in an analysis of eighty-one observations, found only thirteen instances with extensive ascites. In the acute miliary tuberculosis with rapid exudation the effusion may be bloody, but this is not so com-

¹ Paris Thesis, 1884.

mon as in cancer, though the opposite statement is usually made. It has frequently been mistaken for the effusion in connection with cirrhosis, of which, indeed, it may sometimes be a complication. It is somewhat remarkable with what frequency acute tuberculosis of the serous membranes occurs in this disease. Moroux¹ and Wagner² have called attention to the involvement of the peritoneum, which is not so often affected as the pleura. O. has notes of six cases in which acute tubercular pleurisy occurred as a final complication in cirrhosis. Cases with extreme *tympanites* are also common. This condition, the result of impairment of the tone of the muscular coats, is a very constant feature in all forms of the disease. Many writers refer to the fact that the temperature in tubercular peritonitis may be normal, but it is not generally known that the temperature may be subnormal for weeks or months at a time. In the cases of fibrous tubercle without much inflammatory process or effusion, there is, as a rule, very slight fever and subnormal temperatures are common. Increase in skin pigment, particularly on the face, is an occasional symptom in tuberculosis of the peritoneum.

To the occurrence of tumor-like formations in tubercular peritonitis we are indebted for much of the increase in our knowledge on this subject, as the errors in diagnosis have shown the frequency with which these tumors occur and also how amenable the condition is to surgical treatment. The question has not been fully considered by any recent writer, yet its importance may be gathered from the fact that in 96 cases in which laparotomy was performed, in 37 the diagnosis was tumor, ovarian or otherwise. We may recognize anatomically, and possibly clinically, four groups of cases in which with tubercular peritonitis tumors occur and may be felt on examination: First, omental tumor; second, sacculated exudation; third, retracted and thickened intestinal coils; fourth, mesenteric glands.

(a) *Omental Tumors* —On the thin and delicate layers of the epiploon tubercles will be found if present at all on the peritoneum, but they do not often form large masses which can be felt through the abdominal wall. The omental tumor in connection with this form of peritonitis results from a slow tubercular process which gradually puckers and rolls the membrane, until it forms an elongated, firm mass attached to the transverse colon lying athwart the upper part of the abdomen. This condition, perfectly well recognized by clinicians, is in many cases peculiar and distinctive. These cases often occur without much exudation, and result from a slow, latent process which may run its course without exciting serious

¹ Paris Thesis, 1883. ² Deutsches Archiv f. Klin. Medicin, Bd. xxxiv.

symptoms. To diagnose this condition from cancer is often difficult. A pronounced tubercular history, subnormal temperatures—which are not so common in cancer, and which are specially likely to occur in these more chronic cases of tuberculosis—and the existence of disease in the pleuræ or lungs, are suggestive indications. Fagge¹ calls attention to the existence of a resonant percussion note above the mass, which sometimes feels as if attached to, and indeed has been mistaken for, the edge of the liver, roughened and nodular.

(b) *Sacculated Exudations*.—These are the most common, as they are undoubtedly the most puzzling, of the abdominal tumors produced by tuberculous disease; so puzzling, indeed, that, as a long list of cases shows in which the operation for ovariectomy has been performed, the very elect among gynecologists may be deceived. In these cases a sero-fibrinous or purulent exudation is confined and limited by adhesions formed between the intestinal coils, the parietal peritoneum, the mesentery, and the abdominal or the pelvic organs. What is felt as tumor may be entirely fluid, or it may have an irregular nodular character from the presence between the coils of large caseous masses. These sacculated tumors, due to tuberculosis, may, as in other forms of peritonitis, be met with in the upper, middle, or lower abdominal regions. In the upper zone, which includes the stomach, liver, and spleen, encysted collections of fluid are extremely common. Thus we have the localized peritonitis associated with gall-bladder disease, and with various affections of the stomach and of the liver and spleen. The effusion in these cases may be limited entirely to the upper region of the peritoneum. In tubercular disease by far the most common sacculated exudation occurs here with perihepatitis over the surface of an enlarged liver, and may lead to the suspicion of a gall-bladder tumor projecting below the edge of the ribs. These encysted peritoneal tumors are less common in the upper abdominal region. In the middle zone, which includes the peritoneal cavity from the level of the transverse meso-colon to the false pelvis, and which embraces the omentum and intestine, these encysted tumors are much more common, and, as the record of operations shows, are very frequently mistaken for ovarian tumor. They fall into two divisions, those in which the entire anterior portion of the peritoneal cavity is occupied by a large collection of fluid, and those in which a more limited sacculated exudation is found on one or the other side of the abdomen or in the middle line. Lastly, there are the sacculated exudations within the pelvis proper, in which case the disease almost always starts from the Fallopian tubes. The tubercular process

¹ Practice of Medicine.

may be exclusively upon the parietal peritoneum, and the coils of intestines glued to the lateral walls may shut off completely the pelvic from the general cavity.

(c) *Retracted and thickened intestinal coils.*—The matting together and thickening of several coils of the intestines may form a mass of great distinctness and even lead to the diagnosis of a solid tumor. This is most frequently met with in the cecal region. They are not necessarily fixed tumors, but may be freely movable. The coils may not form a uniform tumor, but there may be a separation into three or four irregular masses, divided by fissures and covered with thick lymph. It is possible for the coil to form a resonant tumor.

(d) *Mesenteric Glands.*—Less common, perhaps, in tubercular peritonitis than any one of the previous conditions is the presence of tumors caused by enlarged glands. So far as can be ascertained, in none of the cases of laparotomy did they lead to an error in diagnosis. Cases are, however, on record in which extensive tuberculosis of these glands formed palpable tumors associated with ascites. A question of special interest relates to the association of mesenteric gland disease with tubercular peritonitis. Gairdner has urged that in a large proportion of the cases of so-called *tabes mesenterica*, in which there is enlargement and hardness of the abdomen—the condition which the French speak of as *carreau*—there is involvement of the peritoneum. Jacobi has recently expressed the same opinion.¹

The *diagnosis* of these peritoneal tubercular tumors offers difficulties which vary greatly in the different varieties. The omental tumor is probably a less frequent source of error than any other, but, as an identically similar condition may exist in cancer, it is not always possible, unless there is marked tubercular disease elsewhere, to determine the precise nature; and, as we have seen, even an acknowledged expert like Gairdner may be led astray. The lumpy, nodular character of the mesenteric tumors gives to them also a certain degree of distinctness. The mistake is sometimes made of confounding the large, caseous nodules situated between the intestinal coils with the mesenteric glands. The possibility of their recognition depends very much on the degree of distention of the bowels, as extreme tympanites may completely cloak a very large tumor of this character. The tumors formed by contracted and thickened intestinal coils usually lead to error in diagnosis. The recognition of the saccular exudation, more particularly its differentiation from cystic ovarian disease, offers really serious difficulties, the extent of which may best be appreciated by the fact that of 96 cases of lapa-

¹ New York Medical Journal, ii., 1889.

ratomy in tubercular peritonitis, in not less than 30 ovarian disease was supposed to be present. Such being the case, it may be worth while to discuss briefly certain diagnostic details. There is no single criterion which enables us to say in a given case that the condition is one of encysted peritonitis, nor, indeed, is there any special group of symptoms which can be regarded as distinctive. The points most suggestive, in individual cases, of tubercular trouble are :

First: The history of the patient and of the disease. Tubercular antecedents are common. Evidence may exist of old tubercular lesions. Gradual failure in health and strength may perhaps be taken into consideration, but it must not be forgotten that in many of the cases the patients have been robust and well nourished. The mode of onset is in the majority of instances gradual, but this is such a variable factor that it is not of very much value; perhaps the most which can be said on this point is that there can usually be elicited a history of obscure abdominal pains, irregular febrile attacks, and altogether a greater degree of gastro-intestinal disturbance than generally accompanies the slow evolution of ovarian cysts. If the case has been under observation for some time, the fever record should be of great assistance, as high or very low temperatures more commonly occur in this condition, though it is true that in inflamed and suppurating ovarian cysts there may be fever of a hectic type.

Second: The local physical signs. If possible, these are more deceptive than the history and symptoms. The question is not so much between the characters of a sacculated exudation and ascites, but it is the extremely nice one of discriminating between two varieties of sacculated effusion, ovarian and peritoneal. In typical cases the physical signs have conformed in every particular to those of cystic ovarian disease. There are a few indications which may at times be useful; thus when the sacculated tumor is limited and small, the outlines may not be so definite and clear as in ovarian disease. This is a point referred to by several writers. The position and form may be variable, owing to alterations in the calibre of the surrounding intestinal coils of which in part the walls are composed. At the periphery of the tumor irregular, nodular bodies—cheesy masses—may sometimes be felt, which in several instances have led to the diagnosis of malignant disease. Depression of the vaginal wall is not a safe indication one way or the other, as the condition may be present in ovarian tumor as well as in encysted peritonitis.

Third: In every case the condition of the tubes and of the lungs and pleura should be most thoroughly examined. The association of a tubal tumor with an ill-defined, anomalous mass in the abdominal cavity should arouse suspicion at once.

So also the evidence of involvement of the pleura or of the apex of one lung.

Curability.—Until within the past few years, the general opinion in the profession has been that this disease is incurable; and in looking over the text books of medicine, with but few exceptions the prognosis is given as “always fatal.” Evidence, however, has been rapidly accumulating to show that in a considerable number of cases recovery in this disease is possible, either spontaneously or after operative interference.

(a) *Spontaneous Cure.*—There is no inherent improbability why tubercles on the peritoneum should not undergo involution as they do elsewhere. Anatomically the peritoneal growth bears in its evolution a close analogy to the pulmonary, and this is still further borne out by the retrograde changes through which it passes. Just as the aggregations of miliary nodules in the lung may undergo the changes which we speak of as healing, becoming hard and fibroid, so in the peritoneum the tubercle tends in many cases to become sclerotic, and passes into a condition in which it is practically harmless. This beneficial result is more likely to be seen in cases belonging to the group in which, from the outset, the process is subacute and not associated with much exudation; but there are cases on record in which recovery has followed even after extensive effusion. The anatomical changes are, in brief, these: fibroid and pigmentary induration of the tubercles, absorption of the exudate, transformation of the fibrinous material into connective tissue, with the union to a greater or lesser extent of the intestinal coils and of the peritoneal surfaces with each other. The cases which are most likely to terminate favorably are those in which the infection is limited to the peritoneum, the inflammation of moderate grade, and the effusion slight in amount and sero-fibrinous. An adhesive inflammation, as it is termed, may accompany the process from the outset, and a gradual sclerosis may overtake the tubercles and render them harmless. Caseation and ulceration, with a sero-purulent exudation, preclude the possibility of spontaneous cure. Extension to the pleura and lungs, and the co-existence of intestinal or tubal disease, are conditions equally unfavorable to permanent recovery.

(b) *Cure by Operation.*—The beneficial effects which, in a number of cases, followed the opening of the peritoneum when a sacculated exudation was mistaken for ovarian tumor, encouraged surgeons to perform laparotomy in ordinary cases of tubercular peritonitis accompanied with much effusion. The questions remain for consideration, What cases are most suitable for operation, and how can we explain the beneficial influence? Undoubtedly cases with fresh eruption and considerable effusion, whether free or sacculated, offer the best

chance of recovery, as the disease is more likely to be primary in the peritoneum, the general condition is usually better, and the subsequent chances of general infection are much slighter. When the Fallopian tubes are extensively diseased, and when the process has extended through the diaphragm to the pleura, the condition is of course less favorable. The existence of marked omental tumor, in the form of a transverse ridge, need not necessarily be an objection to operation, as spontaneous resolution of such masses may take place. In cases, then, with somewhat sudden onset, rapid development of ascites with fever of moderate grade, we may be most sanguine of success. In the class of cases with extensive caseous masses in the peritoneum and a purulent exudation, the outlook is necessarily less hopeful; but even in such instances, particularly when the exudation is sacculated, laparotomy may be advised as a palliative measure. In the chronic adhesive form, no benefit can be expected to follow the operation, which can only be intended to remove an omental mass or to open a sacculated effusion. In the majority of the cases of this group nature is effecting a cure in which she scarcely needs outside assistance; and the danger lies not so much in the peritoneal disease as in the risk of pulmonary affection. It is difficult to explain the beneficial results of the operation. It is interesting to note that not alone in tubercular peritonitis, but in other forms with effusion, the simple opening and drainage of the cavity has seemed to exercise a very beneficial effect on the subsequent course of the disease. Mr. Lawson Tait¹ comments at some length on this remarkable tendency of abdominal neoplasms to undergo retrograde changes after an exploratory incision. His statements on this point are most interesting and deserve the careful consideration of physicians as well as surgeons. He says that he has seen tumors disappear after laparotomy in cases of disease of the liver, spleen, and head of the pancreas. He does not specifically mention cancer of the peritoneum. His remarks deserve quoting, as they bear directly upon this subject: "The cases are far too numerous, and the results indicate sequence far too clearly, for us to dismiss the phenomena as a mere coincidence; nor can we accept the explanation of subsequent medical treatment as having brought about this much-desired ending. I am satisfied that the mere opening of the peritoneal cavity has a direct influence in setting up the process of absorption of the tumor, and my conviction in this direction has increased my confidence in the principle of exploration. That some emphatic physiological change is at once set up by opening the peritoneal cavity is clearly indicated by the uniform onset

¹ *Edinburgh Medical Journal*, Nov. and Dec., 1889.

of a most distressing thirst, which lasts for days, and is not seen so markedly after any other operation known to me. Let the incision in the abdominal wall be made down to the peritoneum, but let the serous cavity remain unopened, and this thirst is not marked. But let the peritoneum be opened but a finger's breadth and the result is marked. That a therapeutic change is effected in the peritoneum itself by the mere opening of the cavity is now universally recognized in the treatment of what we call tubercular peritonitis by abdominal section. I have now had a large experience on this point, and can say positively that we can cure permanently and speedily cases that have gone even as far as suppuration, by opening and cleansing. But in the bad cases in all probability the cleansing is never complete, no matter how much time and care are spent on it. And in the non-purulent cases I very often do no cleansing at all, but merely empty out the serum and put in a drainage pipe. Yet the great majority of these cases are cured by these simple means." Evidently, in whatever way brought about, the opening and drainage of the peritoneum favors in a remarkable way the regression of the tubercles; and it does more than this, for with an improvement in the local symptoms the fever reduces and the general condition of the patient rapidly improves. It must not be forgotten that in certain cases the bacilli are very difficult to find in peritoneal tuberculosis, though they may be most abundant even when the tubercles are very hard and fibroid. The important practical point is the relief and cure of these cases by laparotomy, and the surgeons may well leave to the pathologist the minor question of determining the nature of the chronic peritonitis. Among the conclusions which follow from the foregoing considerations are:

1st, That tubercular peritonitis is often a latent affection, localized in the peritoneum, which may even run its course without inducing special symptoms.

2d, That, as in other local tubercular processes, there is in this a natural tendency to healing, which takes place more frequently than has hitherto been supposed.

3d, That statistical evidence shows laparotomy to be in many cases a palliative, and in a certain number a curative, measure.

B. H. W.

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